ASSESSMENT OF LOW VISUAL ACUITY AND ITS INFLUENCING FACTORS AMONG SCHOOL AGE CHILDREN

DISSERTATION SUBMITTED TO

THE TAMIL NADU DR.M.G.R.MEDICAL UNIVERSITY

CHENNAI

IN PARTIAL FULFILMENT OF REQUIREMENT FOR THE AWARD OF DEGREE OF

MASTER OF SCIENCE IN NURSING

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A STUDY TO ASSESS THE LOW VISUAL ACUITY AND ITS INFLUENCING FACTORS AMONG SCHOOL AGE CHILDREN IN POONAMALLEE, CHENNAI, 2010 – 2011

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ABSTRACT

Vision is the primary means of integration between individual and external environment. According to the world health organization 90% of the blind live in the developing countries and among the developing countries India has the highest percentage of people who are blind as estimated 12 million people.

The age between 6-12yrs is probably one of the healthiest period of life. Attention to the eyes of school children is very important and can be achieved by society and by the active participation of the parents.

A study was conducted to assess the low visual acuity and its influencing factors among school age children at Poonamallee, Chennai, 2010-2011. The objective of the study was to assess the low visual acuity and its influencing factors and associate the low visual acuity with influencing factors and demographic variables among school ago children.

The study was conducted by adopting cross sectional design. 150 school age children. Who have fulfilled the inclusion criteria were selected by using non probability purposive sampling technique. The conceptual framework adopted was based on Imagine King's Goal Attainment Model.

In this study, by using Snellen's chart, the low visual acuity were assessed among school age children and questionnaire determining influencing factors were asked to mother by interview methods. Analysis revealed that the 150 school age children had mild vision loss, Among which 107(71.34%) had the scale of 6/9 in both eyes, 35(23.33%) had the scale of 6/12 in both eyes, 8(5.33%) had the scale of 6/18 in both eyes. And the association of low visual acuity with influencing factor were environmental such as hours of spending home work,hours of watching television and vitamin A deficiency factors such as taking vegetables like carrot and pumpkin. Hence the pamphlets of vision loss were distributed to the parents of children. Effective method of vision screening in school age children are useful in detecting corrective causes of decreased vision and equip the mothers with knowledge and practice to promote normal vision among school age children.

CHAPTER – I

INTRODUCTION

One of the most wonderful thing in nature is a glance of the eye; it transcends speech; it is the bodily symbol of identity

Ralph Waldoemerson

Vision a Complex human sense, has been recently focused some of the greatest medical and surgical innovations. The human eye is nature's most sophisticated camera. The quality of vision worsens, while there are many important changes in the healthy eye, the most functionally important changes seem to be a reduction in the pupil size and the loss of focusing capability.

Vision is the primary means of integration between individual and external environment. Visual problems have negative effects on learning and social interaction, thus affecting the natural development of intellectual, academic, professional, and social abilities.Several authors recognize the association between adequate academic performance and good visual health

Some of the major factors influencing low visual acuity among school age children in community are environmental such as watching television/computer/video game, drawing, sewing, stenous home work, congenital, heredity, vitamin A deficiency are also considering to be influencing visual acuity.

The proportion of children suffering non-preventable blindness in wealthy and poor countries is comparable, but preventable blindness is much more prevalent in the developing world.The age between 6-12 yrs is probably one of the Healthiest period of life. Attention to the eyes of school children is very important and can be achieved by seeing the active participation of the parents.

Several survey have demonstrated the importance of the early diagnosis of visual problems as an essential means of minimizing and preventing severe problems in the

future. In developing countries, the scenario is even more worrisome: data shows 80% of blindness cases worldwide occur in these countries, and that two-thirds of these cases are either preventable or curable.

From the public health perspective, mass investigation of visual problems in children by opthalmologists is too costly which suggests the administration of visual acuity tests by non-physicians , as long as trained and supervised. This is the recommended procedure where dealing with populations clustered in to schools, within the age group in which visual problem are a priority. Routine visual acuity evaluation is aimed at ensuring good visual health , helping to attenuated the high rates(90%) of school dropout and academic failure, and preventing several more important visual complications.

Blindness in children is often preventable if communities and parents become aware of the causes. Hence assessment of influencing factors in low visual acuity among school age children has been a major objectives of this study.

The who recently introduced the global imitative for the elimination of avoidable blindness by the year 2020 known as vision 2020 – The Right to Sight

BACKGROUND OF THE STUDY

According to the world health organization 90% of the blind live in the developing countries. And among the developing countries India has the highest percentage of people who are blind as estimated 12 million people.

The sad part is that most of these are avoidable blindness. Had proper screening and treatment been given in time, 75% of them need not have been blind as most blindness and vision loss is either preventable or treatable. . There are an estimated 500,000 new cases each year of childhood goes blind every minute

India,the second most populous country in the world,is home to 23.5% of the world's blind population.It is estimated that atleast 200,000 children in india have severe visual impairment or blindness and approximately 15000 are in schools for the blind.

NAME OF THE STATE	POPULATION 2001 CENSUS
Tamil nadu	6,21,10,839
Andra pradesh	7,57,27,541
Chhatisgarh	2,07,95,956
Madhya pradesh	60,385,118
Maharastra	9,67,52,247
Orrisa	3,67,06,920
Rajesthan	5,64,73,122
Uttra pradesh	1,66,052,859
Bihar	8,28,78,796
Gujarat	5,05,96,992
Himachal pradesh	60,77,248
Karnataka	5,27,33,958
Kerala	3,18,38,619
Punjab	2,42,89,296
West bengal	8,02,21,171

SIGNIFICANCE AND NEED OF THE STUDY

The WHO recently introduced the global imitative for the elimination of avoidable blindness by the year 2020 known as vision 2020 – The Right to Sight

Uzma, et al., (2009) conducted a study to assess the prevalence of refractive error and common ocular diseases in school – aged children in urban and rural populations in and around Hyderadad..The methodology adopted were cross section study and result showed the prevalence of refractive error was greater(25.2%) in the urban than the rural group (8%).Myopia measured with autorefraction was observed in 51.4% of urban children and 16.7 % in rural children.

Verrone and Simi., (2008)equates a study to find out the Prevalence of Low visual acuity & to diagnose the ophthalmologic diseases that cause it in 6 yr old children in Argentina.The methodology adopted to carry out the study is by observational, descriptive & transversal design. The result observed was 10.7 % low visual acuity and Prevalence of amblyopia was 3.9 % and Astigmatism was predominantly frequent. The most frequent pathological backgrounds were found out to be ocular infections, Premature birth, history of Malnutrtion & Maternal use of tobacco.

Muhit ,et al.,(2007)assessed a study on the causes of severe visual impairment and blindness in Bangladesh.Children were recruited from all 64 districts in Bangladesh through multiple sources.Causes were determined and categorised using World Health Organisation methods.The result observed were 32.5% mainly unoperated cataract,followed by Corneal pathology (26.6%)and 13..1% were disorders of the whole eye.

Aftab Ahmad ,et al., (2007) made a study to assess the incidence of myopia among school Children & to determine the association of genetics, nutrition & close work to myopia. They conducted a cross sectional survey among school children of 8-15 yrs age. A total of 57 student (19 %) were found to have myopia and genetic factor was present in 91% of myopes and 30 % were malnourished.

Saad, et al., (2007) conducted a preliminary survey to detect the Prevalence of Refractive error (RE) & low vision among 5839 School children aged 7-14 yrs in Cairo, Egypt. The Screening revealved that 1292 of the 5839 students (22.1%) had Refractive error (RE) and 728 students (12.5%) had low vision.

Zimmerman, et al., (2006) carried out a study to test the hypothesis that television viewing in the first 4 years of life is associated with protesting having the television turned off at age 6. Data were available for 1331 children.Resulting in 63% of children protested having the television turned off at age 6.In a logistic regression model, hours of television viewed per day before age 4 was associated with increased odds of protesting at age 6.

Rose, et al., (2005) made a study to describe the distribution of visual acuity and causes of visual loss in a representative sample of cross sectional study , one thousand seven hundred thirty eight predominantly 6 yrs old children examined during 2003 – 2004. The study shows that the prevalence was higher in girls than boys and among children of lower socioeconomic status.Uncorrected astigmatism and amblyopia were the most frequent causes.

Visual impairement is a worldwide problem that has a significant socio economic impact. Childhood blindness is the priority area because of the number of years of blindness that ensues. Data on the prevalens and causes of blindness and severe visual

impairement in children are needed for planning and evaluating preventive and curative services for children, including planning special education and low vision services. The available data suggest that there may be a tenfold difference in prevalence between the wealthiest country of the world and the poorest, ranging from as low as 0.1/1000 children aged 0-15 years in the wealthiest countries to 1.1/1000 children in the poorest. It is estimated that the cumulative number of blind person years worldwide due to childhood blindness ranks second only after the cumulative number of blind-person-years due to cataract blindness. Considering the fact that 30% of indias blind loss their eye sight before the age of 20 years and many of them are under five when they become blind, the importants of early deduction and treatment of visual loss, among young children is obvious.

Children do not complaint of defective vision, and may not even be aware of their problems. They adjust to the poor eye sight by sitting near the black board,holding the books closer to their eyes,squeezing the eyes and even avoiding work requiring visual concentration. This warrants early detection and treatmemt to prevent permanent disability. Effective method of vision screening in school children are useful in detecting correctable causes of decreased vision, especially refractive errors and in minimizing long term visual disability.

75% of all school age children are school going children. The droplets mostly belongs to families with low socioeconomic status, minimal family education and economic necessity for wages earning to support the family. Children in the school going age group represent 25% of the population in the developing countries. They offer significantly representative material for these studies as they fall best in the preventable blindness age group,are a controlled population.

Hence the review of literature and practical experience motivated the researcher to help and equip the mothers with knowledge and practice to promote normal vision among the children. So the investigator was interested to conduct it as a research study

TITLE

Assessment of low visual acuity and its influencing factors among school age children.

STATEMENT OF THE PROBLEM

A Study to assess the low visual acuity and its influencing factors among school age children in Poonamallee, Chennai 2010-2011.

OBJECTIVES

1. To assess the low visual acuity among school age children.
2. To assess the influencing factors of low visual acuity.
3. To associate the low visual acuity with influencing factors.
4. To associate the low visual acuity with demographic variables.

VARIABLES

Research Variables

Low visual acuity and its influencing factors

Demographic Variables

Age, Sex educational status, Occupation, Family, Income

OPERATIONAL DEFINITION

Low Visual Acuity

Refers to vision, in which the child is not able to read from 6 meter distance and diagnosed to have visual problem and which is measured with snellens chart.

School Age Children

It refers to individual between the age group of 6 – 12 years.

Influencing Factors

It includes environmental such as watching television/computer/ and close work such as playing video games/stenous home work/sewing/drawing, vitamin A deficiency. congenital and heredity.

ASSUMPTIONS

1. Low visual acuity is most prevalent among school age children.

2. Environmental,Vitamin A deficiency, heredity, congenital factors may be responsible for low visual acuity.

DELIMITATIONS

1. Study was delimited to the period of 4 weeks
2. Study was delimited to a selected area.

PROJECTED OUTCOME

1. Will enable nurse to initiate guidance and counsilling programme to improve the level of visual acuity.
2. The study will help the mothers of children with low visual acuity to adapt measures that would enhance the visual acuity of their children.

SUMMARY

This chapter deals with the background, significant and need for the study. objectives, variables, assumptions, operation definition ,delimitation of the study.

ORGANIZATION OF THE STUDY

The following chapter contains,

Chapter II - Review of literature, conceptual frame work.

Chapter III - Research Methodology.

Chapter IV - Data analysis and interpretation.

Chapter V - Discussion.

Chapter VI - Summary, recommendation.

This is followed by reference and appendices.

CHAPTER – II

REVIEW OF LITERATURE

Review of Literature is an essential component of a worth while study in and field of knowledge. It helps the investigator to gain information on what has been done previously and to gain deeper insight in to the research problem. It also refers to an extensive, exhaustive and systematic examination of publication relevant to research project. Literature review can serve a number of important functions in the research process like providing sources of research ideas, orientation of what is already known, information of research approach & provision of conceptual context. The review of literature has been arranged under the following headings.

Part I: Literature review

Section A : General information on low visual acuity

Section B : Literature related to low visual acuity and its influencing factors.

Section A : General information on low visual acuity

Visual Acuity:

It is acuteness or clearness of vision, especially form vision, Which is dependent on the sharpness of the retinal focus within the eye and the sensitivity of the interpretative faculty of the brain.

Low Visual Acuity :

The person who cannot able to visualize the object clearly.According to snellen's chart, visual acuity is graded as follows.

VISUAL ACUITY SCALE	
Mild vision loss	6/9 – 6/18
Moderate vision loss	6/24 – 6/48
Severe vision loss	6/60 & above

Low visual acuity among school age children in community is associated with the following factors such as:

- Environmental factors (Watching television, computer, close works)
- Heridity factors
- Congential factors
- Vitamin A deficiency factors

Diagnostic procedures adapted to assess low visual acuity:

- Snellen's test
- Ophthalmoscopy
- Fundos examination
- Retractometer

Snellen's test procedure has been used to assess low visual acuity

Snellen defined "standard vision" as the ability to recognize one of his optotype when it subtended 5 minutes of arc. Thus the optotype can only be recognized if the person viewing it can discriminate a spatial pattern separated by a visual angle of 1 minute of arc.

The patient is seated at a distance of 6m from the snellen's chart. The patient is asked to read the chart with each eye separetly and the visual acuity is recorded. The numerator being the distance of the patient from the letters and the denominator being the smallest letter accurately read. When the patient is able to read up to 6m line, the visual acuity is recorded as 6/6 which is normal. Similarly, depending upon the smallest line which the patient can read from the distance of 6m his vision is recorded as 6/9, 6/12, 6/18

Prevention of vision loss for children:

- **Diet:** A healthy diet with emphasis particularly rich in Vitamin A includes
    - Plant sources include green leafy vegetables & yellow / orange fruits & vegetables especially carrot, pumpkin, papaya, mango, oranges etc. Red palm oil is also rich in vitamin A.
    - Ghee / Oil / Butter should be added to these vegetables.

- Animal sources include – liver, egg, fish, milk, milk products such as cheese, curd and butter.

- **Vitamin A supplementation**
  - A preventive dose of vitamin A supplementation should be given to all children in the age group of 9-36 months at six monthly intervals.
  - Children between 3 to 5 yrs can also be given at six monthly intervals. Ideally, a child should have received the complete five doses of vitamin A by the age of 3 yrs.
- **Avoid watching Television:** In a dark room.
  - A well lit room with white light (tube light) is ideal.
  - Viewing distance for watching TV is 4 meters or more.
  - Do not put TV in your bedroom.
  - Encourage your kid to do other things besides watching.
  - Fill the room where you have television with lot of books.
- **Computer:**
  - Place the computer screen at eye level.
  - Distance between the monitor and the eye for children is 18 – 28 inches.
  - Do not let the child sit for more than 40 min continuously in front of a computer monitor.
  - Make sure your computer is clean and try using an antiglarescreen
  - Make sure you work in a well ventilated room.
  - Computer should be placed about 50 cm from the eyes.
  - The print can be adjusted for boldness, color ,line spacing to make it easy to read.
- **Closework:**
  - Visual activities performed at close distance with in an arm's length.
  - After 30 – 40 min of continuous close work, take a vision break of 3 – 5 min by looking at distance objects or out of a window.
  - Hold their books about 30 cm away from their eyes and sit upright on a comfortable chair.
- **Others:**
  - Give measles immunization
  - Promotion of breast feeding

- Premarital genetic counseling family planning control in families with inherited diseases.
- Water tight swimming goggles preventing irritation of eyes.
- Avoid wearing other spectacles.
- No eye drops should be instilled unless prescribed by the doctor. Avoid pouring oil in to the eyes
- Participate in the eye camp conducted in the school/community

Section B : Literature related to low visual acuity and its influencing factors

Unal Ayranci, et al., (2009) carried out a study to determine the prevalence of visual impairments among children in primary schools. Visual acuity was determined with the Snellen's E chart. The result observed were, of the study group (n=1606), 53.7% (n=864) were boys and 46.3% (n=742) girls. The mean age of the participants was 10.52±2.28 (range 6-17), The girls had a higher frequency of a presenting visual impairment than boys (2.4% vs. 1.0%), ($p<0.05$). Twenty seven (1.7%) children presented with vision of d"20/40 in the better eye. The prevalence of presenting visual acuity for d"20/40 was significantly higher in children with glasses compared to the group of children without glasses ($p<0.05$). The prevalence of amblyopia was 5.0%, whereas that of strabismus was 1.7%.

Bhardwaj, et al., (2009) made a study to identify the disorders of visual acuity among adolescent school children in pune. A rapid, community based survey was conducted to assess the prevalence of disorders of visual acuity among adolescent. A sample of 236 children studying in six sections were examined after random selection by a two stage sampling technique. 50 children were found to have errors of refraction resulting in Prevalence rate of 21.19 %.

Gogate, et al., (2009) conducted a study to determine the cause of severe visual impairment and blindness in children in schools for blind in southern karnataka stateof India.A total of 1179 students aged less than 16 yrs were examined by cross sectional study , resulting in 891 of students were of eligibility criteria and 321 (35.7%) were cogenital anomalies,133(14.9%) mainly due to Vitamin A deficiency,102(11.4%) were suffered from cataract and 177 children (19.9%) were suffered from retinal disorders

Haddad, et al., (2009) made a study to determine the causes of visual impairment in children This study evaluated 3,210 visually impaired children (49% female, 51% male; average age, 5.9 years). Visual impairment was present in 57% (visually impaired group) and 43% presented another associated disability (multiple disability group). The result revealed that the main causes of visual impairment in the visually impaired group were toxoplasmic macular retinochoroiditis (20.7%), retinal dystrophies (12.2%), retinopathy of prematurity (11.8%), ocular malformation (11.6%), congenital glaucoma (10.8%), optic atrophy (9.7%), and congenital cataracts (7.1%). The main causes of visual impairment in the multiple disability group were optic atrophy (37.7%), cortical visual impairment (19.7%), toxoplasmic macular retinochoroiditis (8.6%), retinopathy of prematurity (7.6%), ocular malformation (6.8%), congenital cataracts (6.1%), and degenerative disorders of the retina and macula (4.8%). The retina was the most frequently affected anatomic site in the visually impaired group (49.2%) and the optic nerve in the multiple disability group (39%).

Madhu Gupta, et al., (2008) observed a Prevalence of ocular morbidity among school children (6-16 yrs) in Govt & Private school in shimla by cross sectional design and he found that the Prevalence of ocular Morbidity was 31.6 %, Refractive errors 22 %, Squint 25 %, color blindness 2.3 %, Vitamin A deficiency 18 %, Conjunctivitis 0.8 % and reported that Refractive error is most common ocular disorders.

Leon, et al., (2008) made a study to assess visual impairment in school children of upper-middle socioeconomic status in Kathmandu. Random sampling was made in 130 classes at 43 schools. A total of 4,501 children in grades 5-9 were enumerated; 4282 (95.1%) were examined. The prevalence of uncorrected, presenting, and best-corrected visual impairment ($\leq$ 20/40) in the better eye was 18.6%, 9.1%, and 0.86%, respectively. Refractive error was a cause in 93.3% of children with uncorrected visual impairment, amblyopia 1.8%, retinal disorders 1.3%, other causes 0.3%, and unexplained causes 4.4%.

Harsha Bhattacharjee (2008) recommended a study on the causes of childhood blindness in the northeastern states of India.A total of 376 students were examined from which 258 fulfilled the eligibility criteria.Statistical Analysis is made with Microsoft Excel Windows software with SPSS.The result showed that 93 students(36.1%)were congenital anomalies and 94 students (36.7%) were Scarring and 28students (10.9%) were suffered

from cataract and 15 students (5.8%) were retinal disorders and 14 students (5.3%) were optic atrophy.Nearly half of the childrens were blind from conditions which were either preventable or treatable (48.5%).

Knappe, et al., (2007) assessed a study to identify the commonest causes of childhood blindness in congo.The study was conducted in 81 children(< 16 yrs old) and they were examined and reported that 53 (65.4%) were classified as blind, 11(13.6%) as visually impaired and 17 (21.0%) as not impaired.

Eileen, et al., (2006) recommended a study to evaluate docosahexaenoic acid (DHA) and arachidonic acid (ARA)- of infant formula on visual and cognitive outcomes at 4 years of age.The result showed that at 4 yrs, the control formula supplementation group had poorer visual acuity than the breast-fed group,the DHA- and DHA+ ARA-supplemented groups did not differ significantly from the breast-fed group.The control formula and DHA supplemented groups had Verbal IQ scores poorer than the breast – fed group.

Sarem (2006) carried out a study to determine the effect of television on children and adolescents. 250 children were taken as participants and adolescents whose ages varied. The study revealed that children and adolescents are spending most of their time in front of the TV. Besides most of them admire a character and want to act like their famous character.

Carlton, et al., (2006) investigated a study to estimate the cost – effectiveness of screening for amblyopia and strabismus in children aged up to 4 -5 years.A systematic literature reviews were undertaken and cross sectional study was carriedout and the result showed the cost -effectiveness of screening for amblyopia is dependent on the long-term utility effects of unilateral vision loss.

Lan Janssen, et al., (2006) narrated a study to determine the cause of television Viewing, Computer use in Children youth to a variety of health & Social Problems. Only 4 % of girls and 34 % of boys in grades 6-10 watched 26 or len of television per day.

Ravi Thomas, et al., (2005) recommended a study on present status of eye care in India and stated that 23.5% of the world's is of blind population and the result observed from the study were Refractive errors,Childhood blindness, Corneal blindness and glaucoma and hence concluded that these are the important causes of blindness in India.

Luo, et al., (2005) carried out a study to determine the association of spherical equivalent (SE) with low uncorrected visual acuity (VA) along with a proposed definition for myopia using logMAR VA >0.3 as the criteria. Using different SE cut-off points, the results observed was myopia prevalence rates of this sample of schoolchildren varied from 45.8% (SE at least -0.25 D) to 30.7% (SE at least -1.0 D). The cut-off point of > or =-0.75 D had a sensitivity and specificity of 91.8% (95% CI, 89.2 to 94.4) and 93.7% (95% CI, 92.1 to 95.3), respectively, to predict low vision defined as uncorrected logMAR VA > 0.3 (either eye). The next best cut-off point of -0.5D had a higher sensitivity (93.3%), but lower specificity (87.9%).

Abu raihan, et al., (2005) carried out a study on prevalence of significant refractive error, low vision and blindness among children in Bangladesh. A total of 28,835 children were screened in 207 camps; 286 were detected as significant refractive error and 43 llow vision, 62 unilateral, 19 bilateral blind cases.

Mirdehghan, et al., (2004) conducted a survey to determine the causes of severe visual impairment & blindness in schools for visually handicapped children in Iran. The study was performed on 362 student at different grades in 3 schools for the blind. Severe visual loss was seen in 80.9 % and Retinal diseases were the most common cause for low vision.

Goel Manish (2004) carried out a study to identify the Prevalence of Refractive Errors among school children in a rural block of Haryana. 1265 school children (6 -15 yrs) were taken as participants. Out of 16 Govt Senior schools, 4 were randomly chosen. Out of 1265, 172 children (13.6 %) were found to have defective vision, myopia affected only one eye in 22 (1.74 %) and 131(10.36%)students were affected with both eyes. Hyperopia affected only one eye in 2 (0.16%), 17 students were affected and it was found that the Prevalence of Myopia, Hyperopia & astigmatism was more in girls (23.7%) as compared to boys (12.2%).

Nirmalan, et al., (2003) narrated a study to determine the prevalence of blindness and vision impairent in a rural population of Southern India.The methodology adopted were cross section study.A total of 17200 subjects aged 6 yrs or older, including 5150 subjects aged 40 years or older from 50 cluster representative of three southern districts of Tamil Nadu in southern Indai.All participants had preliminary screening consisting of vision using a LogMAR illiterate E chart and the result revealed that Cataracts and refractive errors are the major cause reversible causes for the burden of vision impairment in the rural population.

Titiyal, et al., (2002) carried out a study to find out the causes of severe visual impairment in children in schools for the blind in North India. A total of 703 children were examined in 13 blind schools in Delhi. It was observed that almost half of the children suffered from potentially preventable and/or treatable conditions, with vitamin A deficiency/measles and cataract the leading causes and retinal disorders seem to be increasing in importance while childhood disorders have declined over a period of 10 years.

Anemona, et al., (2002) made a study about myopia in Secondary school students in Tanzania by cross sectional survey, resulting in refractive error (5.6 %), Amblyopia (0.4 %), Strabismus (0.2 %), and other treatable eye disorders were uncommon and reported that 154(6.1 %) Student had significant refractive error

s.

Laura et al., (2002) conducted a study to recognize the negative effects of television on children. The American Academy of Pediatrics (AAP) recommends that children 2 years and older watch <2 hours of television per day and that children younger than 2 years watch no television. Logistic regression models were used to determine risk factors associated with greater television viewing at 0 to 35 months and the association of early viewing habits with school – age viewing. The result obtained from the study was 17% of 0 to 11 months – olds, 48% of 12 to 23 months olds, and 41% of 24 to 35 months olds were reported to watch more television than the AAP recommends. Compared with college graduates, less-educated women were more likely to report that their children watched more televisoin than recommended. Children who watched >2 hours per day at age 3 were more likely to watch >2 hours per day at age 6 (odds ratio: 2.7; 95%

confidence interval: 1.8 – 3.9), controlling for maternal education, race, marital status and employment, household income and birth order.

Khan, et al., (2000) conducted out a study to obtain data on the characteristics of low-vision patients seen at a tertiary eye care hospital in India, resulting in Two hundred and ninety seven (72%) of 450 patients were male. One-fifth were in the 11-20 years age group (21%). Visual acuity in the better eye was <6/18 - 6/60 in almost half these patients (49.3%). One hundred and twenty two patients (29.9%) referred with a visual acuity of ≥ 6/18, either had difficulty in reading normal print or had restricted visual fields. The main causes for low vision were: retinitis pigmentosa (19%), diabetic retinopathy (13%), Macular diseases (17.7%), and degenerative myopia (9%). Visual rehabilitation was achieved using accurate correction of ametropia (174 patients), approach magnification (74 patients) and telescopes (45 patients) for recognising faces, watching television and board work. Spectacle magnifiers (187 patients), hand/stand magnifiers (9 patients), closed-circuit television (3 patients), overhead illumination lamp (143 patients) and reading stand (24 patients) were prescribed for reading tasks. Light control devices (146 patients) were used for glare control, and cane (128 patients) and flashlight (50 patients) for mobility. Patients were trained in activities to improve their daily living skills, (54 patients); counselled in environmental modification (144 patients) and ancillary care (63 patients) for educational and vocational needs.

Mohamed Ali, et al., (2000)collected a clinical investigation to determine the causes of low vision in sudan. By doing various tests, the results revealed that 39.7 % of subjects in blind centers had low vision which can be improved with proper low vision aids. Significant deficiencies were found for all visual functions. Statically it was found that all causes had similar effect on visual functions.

Owens, et al., (1999) investigated the relationship between specific television-viewing habits and both sleep habits and sleep disturbances in school children. Resulting that most of the television-viewing practices examined in this study were associated with at least one type of sleep disturbance. Despite overall close monitoring of television-viewing habits, one quarter of the parents reported the presence of a television set in the child's bedroom. The television-viewing habits associated most significantly with sleep disturbance were increased .

Rahi, et al., (1995) narrated a study on childhood blindness in India.A total of 1411 blind students in nine states were taken as participants and various test were examined by an ophthalmologist and optometrist.Of these 1318 children were severly visually impaired and reported that the main cause were corneal staphyloma,scar and phthisis bulbi(26.4%) and microphthalmos,anophthalmos and coloboma in 20.7% and albinism in 19.3% and cataract in 12.3%.

Indian Journal of Ophthalmology (vol 56(6), pp 495-499) narrated the causes of severe visual impairment and blindness amongst children from schools in north eastern region. A total of 376 students were examined and reported that the causes are congenital anomalies 93 (36.1%), corneal conditions 94 (36.7%), cataract 28 (10.9%), retinal disorders 15 (5.8%), Optic atrophy (14) (5.3%). Nearly half of the children were blind from conditions which were either preventable or treatable (48.5%).

Tanzania Journal of Health Research (vol 11, pp 111-115) investigated the prevalence & causes of low vision among school children in kibaha district.A total of 400 school children were screened, 38 (9.5%)children had low vision and 65% of children with congenital anomalies and 55% of children with refractive errors, 2 children had corneal scars. The main causes are congential anomalies.

PART – II

CONCEPTUAL FRAMEWORK

A conceptual framework or a model is made up of concepts,which are the mental images of the phenomena. It offers framework of preposition for conducting research.These concept are linked together to express the relationship between them.A model is used to denote symbolic representation of the concepts.

Conceptual framework is interrelated concepts or abstraction that are assembled together in some rational scheme by virtue of their relevance, to a common theme.it is a device that helps to stimulate research and the extention of knowledge by providing both direction and impulse.(polit and Hungler,1995)

The researcher adapted Imogen king's Goal Attainment theory.

IMOGENE KING'S GOAL ATTAINMENT THEORY

It is based on the personal and interpersonal systems including interaction, perception, communication, transaction, stress, growth and development, time and space.

Nursing as defined by king, Aprocess of human interaction between nurse and the client where by each perceives the other and the situation, and through communication they set goal, explore means and argue on means to achieve goals.

According to this theory,the nurse and patient meet in some situation, have perception on a particular problem make judgement about the problem, take some mental action and lead to a goal attainment in solving the problem.The process involes interaction and transaction between the nurse and patient. It is dependent upon the achievement of goals.

The investigator adapted king's goal attainment theory as a basis of conceptual framework, which is aimed to assess the low visual acuity among school age children by using snellen's visual acuity scale and interview technique with factors influencing low

visual acuity tools for school age children. Following the assessment the investigator has planned to give referral services to the parents of low visual acuity with low visual acuity and information regarding causes, prevention, management.

The six major concepts of the phenomenon are described as follows

PERCEPTION:

Refers to person's representation of reality. It is Universal, highly subjective and Unique to each person. It is not observable but it can be inferred. The investigator perception is low visual acuity may have high among school age children. parents of school age children may have lack of knowledge on factors influencing low visual acuity.

JUDGEMENT:

Mobilize the resources for relief from low visual acuity among school age children.

ACTION:

Plan to offer relieving of low visual acuity tips through pamphlet, after data collection.

MUTUAL GOAL SETTING:

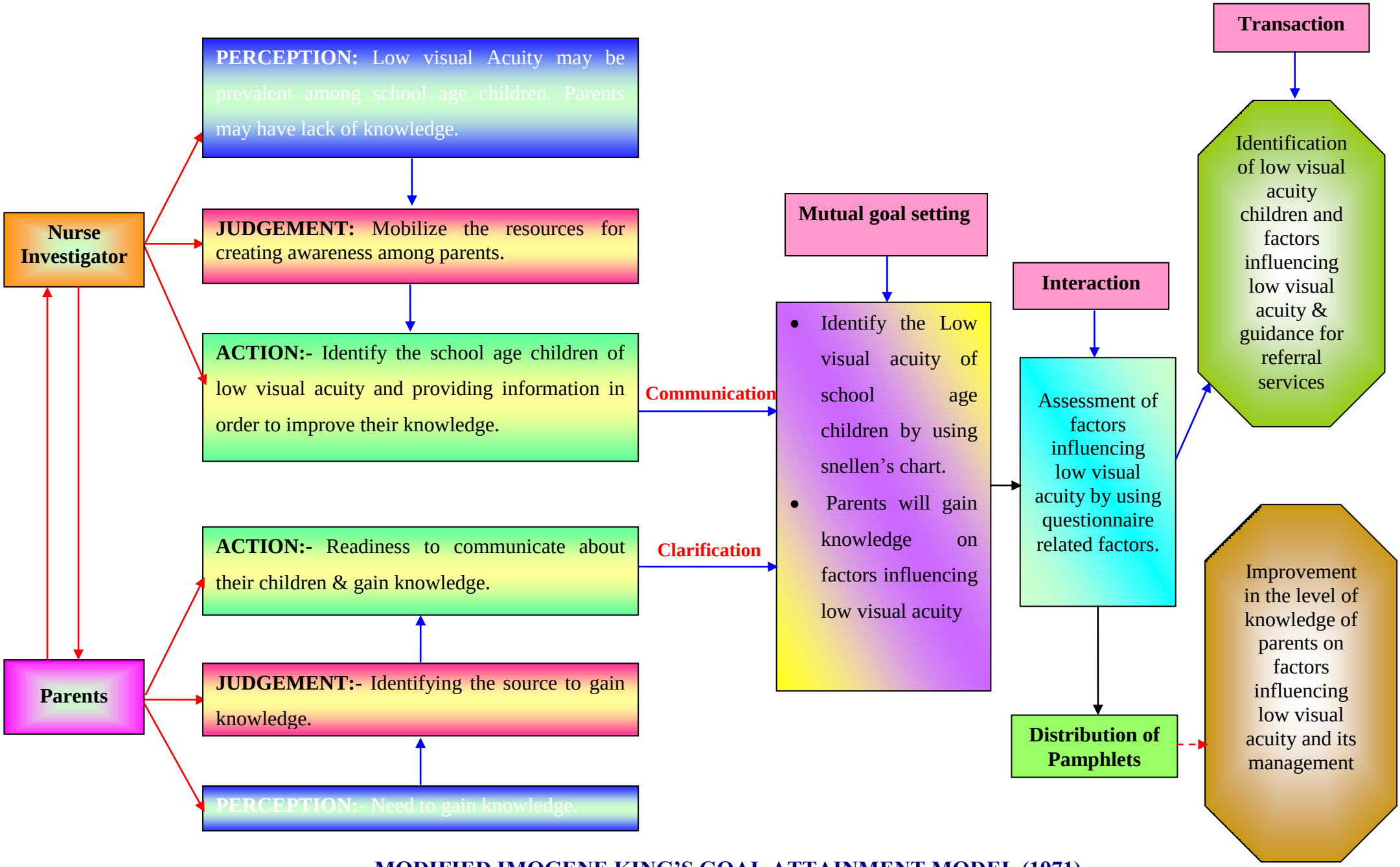
Assess the low visual acuity and its influencing factors among school age children and relieve the low visual acuity from school age children.

INTERACTION:

Refers to the verbal and nonverbal behavior of individual and the environment and between two or more individuals, It involves the goal directed to perception and communication. The investigator applied interview technique by factors questions for parents of school age children.

TRANSACTION:

Identifies the level of low visual acuity among school age children and offering relieving tips of low visual acuity pamphlets.



MODIFIED IMOGENE KING'S GOAL ATTAINMENT MODEL (1971)

CHAPTER – III

RESEARCH METHODOLOGY

This chapters describes the research methodology followed to assess the low visual acuity and its influencing factors among school age children at Poonamallee, Chennai 2010 – 2011.

Methodology is a systematic way to solve the research under taken. Methodology for the study is defined as the way pertinent information is gathered in order to answer the research question or analyze the research problem.

This chapter deals the methodology of the present study which includes to research approach, research design, population, sample & sample size, sampling techniques sampling centering, description of tool, sentry of the study, the data collect procedure, & Plan for data analysis & ethical issues. The study is intended to measure the low visual acuity and it's influencing factors among school age children.

RESEARCH APPROACH

The research approach chosen by the investigator for this study was descriptive survey approach.

RESEARCH DESIGN

The investigator had chosen the cross sectional design to assess the low visual acuity and influencing factors among school age children at Poonamallee, Chennai 2010-2011.

VARIABLES

Research Variable

Low visual acuity and its influencing factors

Demographic Variables

Age, gender, education status of child, mother, father, occupation, family income, number of siblings, religion, type of family.

RESEARCH SETTING

The study was conducted at Poonamallee urban Chennai, Tamil nadu. It is sixteen kilometer away from Vel.R.S. Medical college-College of nursing, Chennai.

POPULATION

Population refers to the entire community and it is important to make distinction between target and accessible population.

Target population

Target population of the study comprised of all school age children in the age group of 6-12yrs years.

Accessible Population

Accessable population of the study comprised of School age children in the age group of 6-12yrs, residing at poonamallee, who fulfill their inclusion crieria.

SAMPLE

Sample of the study comprise of school age children in the age group of 6-12 years**,** who fulfill the inclusion criteria, residing at Poonamallee

SAMPLE SIZE

The sample size of the study was 150 school age children in the age group of 6-12yrs who fulfilled the inclusion criteria.

SAMPLE TECHNIQUE

Non probability purpose sampling technique was used to assess the low visual acuity and its influencing factors among school age children.

CRITERIA FOR SAMPLE SELECTION

Inclusion Criteria

1. School age children in the age group of 6 – 12 years.

2. Both male and female.
3. School age children understand Tamil or English

Exclusion Criteria

1. School age children who were wearing spectacles / contact lens.
2. School age children who were physically sick during data collection. School age children who had undergone corrective eye surgery.
3. School age children who add undergone corrective eye surgery.

METHOD OF DEVELOPING THE TOOL

The tool was designed by Snellen's chart, This is a standard scale comprising of alphabets, it was decided that standard scale was appropriate for assessing the level of low visual acuity.

The following steps were carried out in developing questionnaire determining influencing factors.

- LITERATURE REVIEW
- EXPERT OPINION

Literature review from books, journals, website published and published articles had helped the investigator to develop the tool.

Expert opinion was obtained and their valuable suggestion were incorporated in developing the tools.

DESCRIPTION OF RESEARCH TOOL

The tool consist of the following

PART 1: Assessment of Visual acuity by using snellen's chart

VISUAL ACUITY SCALE	
Mild vision loss	6/9 – 6/18
Moderate vision loss	6/24 – 6/48
Severe vision loss	6/60 & above

PART 2:

Deals with demographic details like age, gender, religion, type of family, educational level, family income No of siblings, Occupation

PART 3:

Questionnaire determining Influencing factors, questionnaire such as 13 environmental factors, 3 heredity factors, 3 congenital factors, 9 vitamin A deficiency factors. The above questions were elicited by interview method by the researcher.

VALIDITY OF THE TOOL

The content of the instrument was validated by one medical expert, one opthamologist, one opthometrist, three nursing experts. The experts suggestions were incorporated in the tool, then the tool was finalized and used for the main study.

RELIABILITY OF THE TOOL

It was established by test retest method for tool(r=82) and for Snellen's chart, interrater method was used(r=80) . The score indicates a high correlation and the tool were considered as highly reliable.

ETHICAL CONSIDERATION

It refers to a system of moral values that is concerned with the degree to which research procedure adher to professional, legal and social obligation to the study participants

The study was conducted only after the approval of dissertation committee. The formal concent was obtained from the president of poonamalee municipality before proceeding the study parents were explained clearly about the study purpose and a verbal consent was obtained before interviewed. The study informations were kept confidential.

PILOT STUDY

It refers to a small scale version, or trial run done in preparation for a major study. Pilot study also tests the reliability, practicability, appropriateness and feasibility of the study and the tool.

The pilot study was conducted in poonamallee, Chennai during 10.5.10-14.5.10. The investigator selected 15 schoolchildren between the age group of 6-12yrs from a ward(1). The data was collected from their parents who fulfilled the inclusion criteria. A oral consent was obtained from the parents. A brief introduction about self and the study was given by the investigator. The data was collected by checking visual acuity by snellen's chart)and an interview schedule and confidentiality of the responses were assured. The statistical analysis of the pilot study revealed that 15 of the school children had low visual acuity. The study revealed a positive correlation (r=82).There were no practical difficulities met by the investigator and the tool was considered to be reliable and appropriate. Hence the same procedure was decided to be followed in a main study.

DATA COLLECTION PROCEDURE

A formal permission was obtained from the president to collect data from 15.5.10-15.6.10.The investigator selected 150 school children by Non probability purposive sampling technique. The visual acuity was checked and data was collected from their parents who fulfilled the inclusion criteria by interview schedule. parents were met in their homes by the investigator and brief introduction about self and the study was given and the confidentiality of the responses were assured. The investigator collected 4-6 samples per day to assess the low visual acuity and its influencing factors among school children. The investigator read out and explained the items of the questionnaire and the responses were noted down immediately. The interview was conducted in tamil. Ethical aspects were considered throughout the study.

Date	Sample	Date	Sample
15-5-10	6	1/6/2010	5
17-5-10	5	2/6/2010	6
18-5-10	6	3/6/2010	6
19-5-10	4	4/6/2010	5
20-5-10	4	5/6/2010	4
21-5-10	5	6/6/2010	6
22-5-10	5	7/6/2010	6
23-5-10	6	8/6/2010	6
24-5-10	6	9/6/2010	6
25-5-10	6	10/5/2010	4
26-5-10	7	11/6/2010	4
27-5-10	4	12/6/2010	5
28-5-10	6	13-6-10	4
29-5-10	4	14-6-10	4
31-5-10	5	**Total**	**150**

DATA ANALYSIS PROCEDURE

Both descriptive and inferential statistics were used.

Descriptive Statistics

Frequency and percentage distribution was used to analyse the demographic data of school age children and to assess the low visual acuity.

Inferential Statistics

Chi-square test was used to associate the low visual acuity with demographic variables, associate the low visual acuity with influencing factors.

CHAPTER – IV

DATA ANALYSIS AND INTERPRETATION

This chapter deals with the analysis and interpretation of date collected from 150 school age children to assess the Low Visual acuity and its influencing factors in poonamallee.

ORGANIZATION OF DATA

The findings of the study were grouped and analysed under the following sections.

Section A : Frequency and percentage distribution of demographic variables

Section B : Assessment of level of Low visual acuity

Section C : Assessment of influencing factors.

Section D : Association of low visual acuity with their demographic variables

Section E : Association of low visual acuity with influencing factors.

SECTION – A

Table 1: Frequency and percentage distribution of demographical variables

N=150

Sl. No.	Demographic Variables	No.	%
1	**Age of the children**		
	6 - 8 years	51	34
	8 - 10 years	62	41.33
	10 - 12 years	37	24.67
2	**Gender**		
	Male	81	54
	Female	69	46
3	**Educational status of the child**		
	1st - 3rd std	51	34
	3rd - 5th std	62	41.33
	5th - 7th std	37	24.67
4	**Religion of the children**		
	Hindu	103	68.67
	Christian	31	20.67
	Muslim	16	10.67
	Others	0	0
5	**Type of the family**		
	Nuclear	102	68
	Joint	48	32
	Broken	0	0
6	**No. of siblings in the family**		
	1	28	18.67
	2	95	63.33
	More than 2	27	18
	Nil	0	0
7	**Educational status of the father**		
	Illiterate	4	2.67
	Primary	31	20.67
	Secondary	69	46
	Higher secondary	31	20.67

Sl. No.	Demographic Variables	No.	%
	Graduate	15	10
8	**Educational status of the mother**		
	Illiterate	22	14.67
	Primary	44	29.33
	Secondary	58	38.67
	Higher secondary	26	17.33
	Graduate	0	0
9	**Occupation**		
	Sedentary worker	39	26
	Moderate worker	75	50
	Heavy worker	36	24
10	**Family monthly income**		
	Below Rs.5000	27	18
	Rs.5001 to 10000	81	54
	Rs.10001 to 15000	42	28
	Above Rs.15000	0	0

The above table describes the distribution of demographic variables.

With respect of age, Majority 62(41.33% were in the age group of 8 – 10 years and 51(34%) were in the age group of 6 – 8 years and 37(24.67%) were in the age group of 10 – 12yrs.

Regarding gender majority 81(54%) of children were males and 69(46%) were female.Considering educational status of the child, 62(41.33%) were studying 3^{rd} – 5^{th} std, 51(34%) were 1^{st} – 3^{rd} and 37(24.67%) were studying 5^{th} – 7^{th} std.

Regarding religion 103(68.67%) were belongs to hindus 31(20.67%) were christian, 16(10.67%) were muslim. Regarding type of the family, 102(68%) were in nuclear family, 48(32%) were in joint family.

Considering the number of siblings in the family, 95(63.33%) were two, 28(18.67) were one, 27(18%) were more than 2.

With respect to educational status of the father, Majority 69(46%) were secondary level, 4(2.67) were illiterate. Regarding educational status of the mother, majority 58(38.67%) were secondary level, 22(14.67%) were illiterate.

Considering the occupation, majority 75(50%) were moderate worker, 36(24%) were heavy worker. Regarding family monthly income, majority 81(54%) were earns between Rs. 5001 – 10000, 27(18%) were earns between below Rs. 5000.

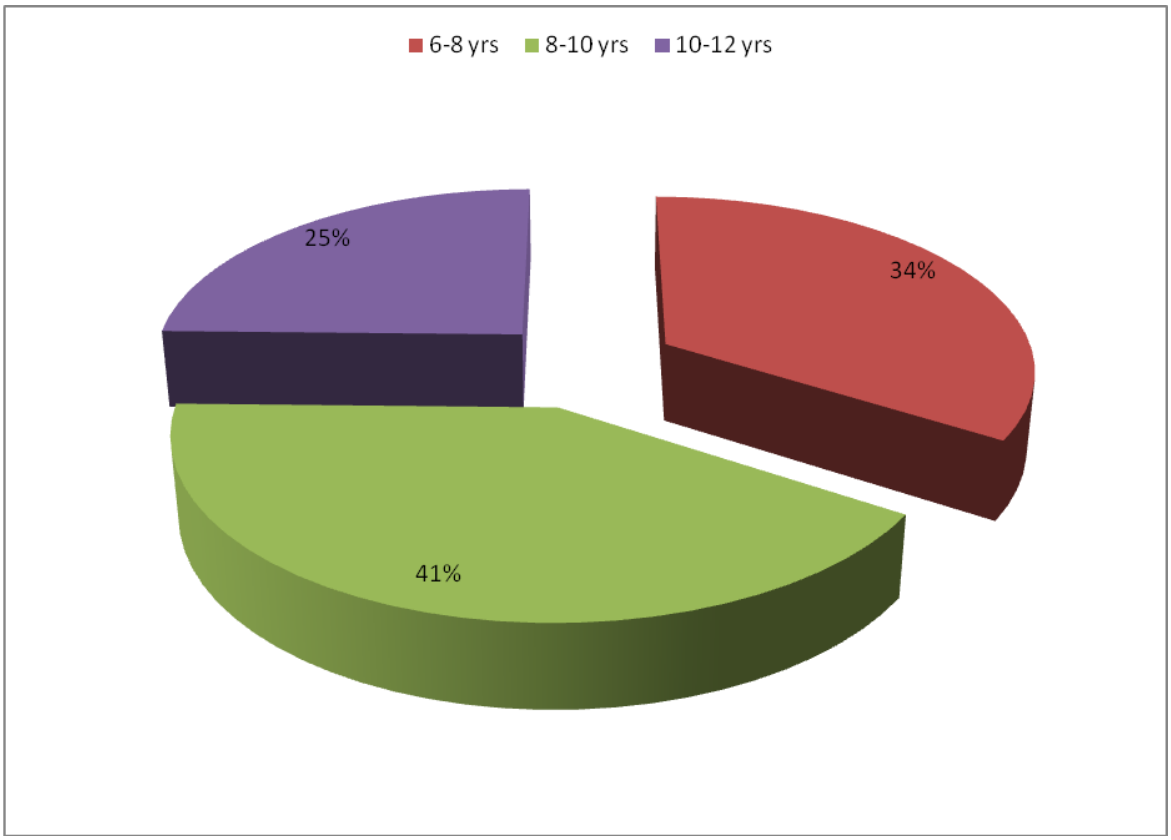


Figure 2: Frequency and Percentage distributions of Age of children

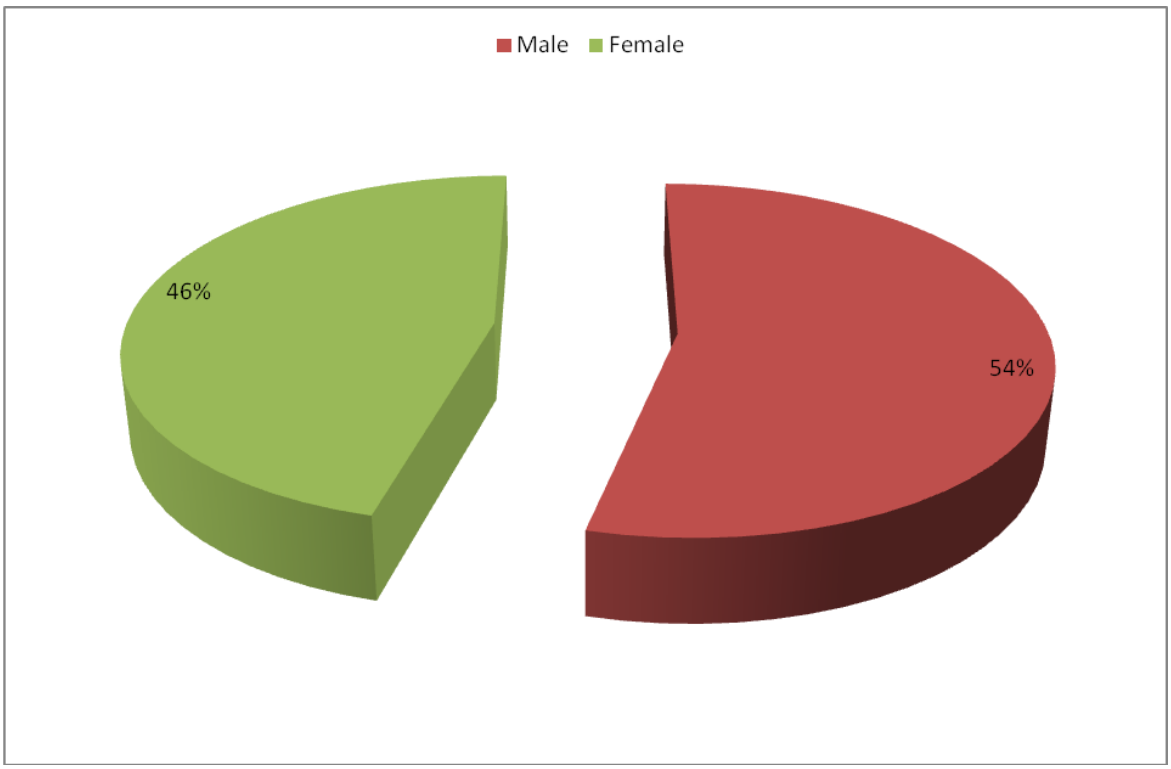


Figure 3: Frequency and Percentage Distributions of Gender

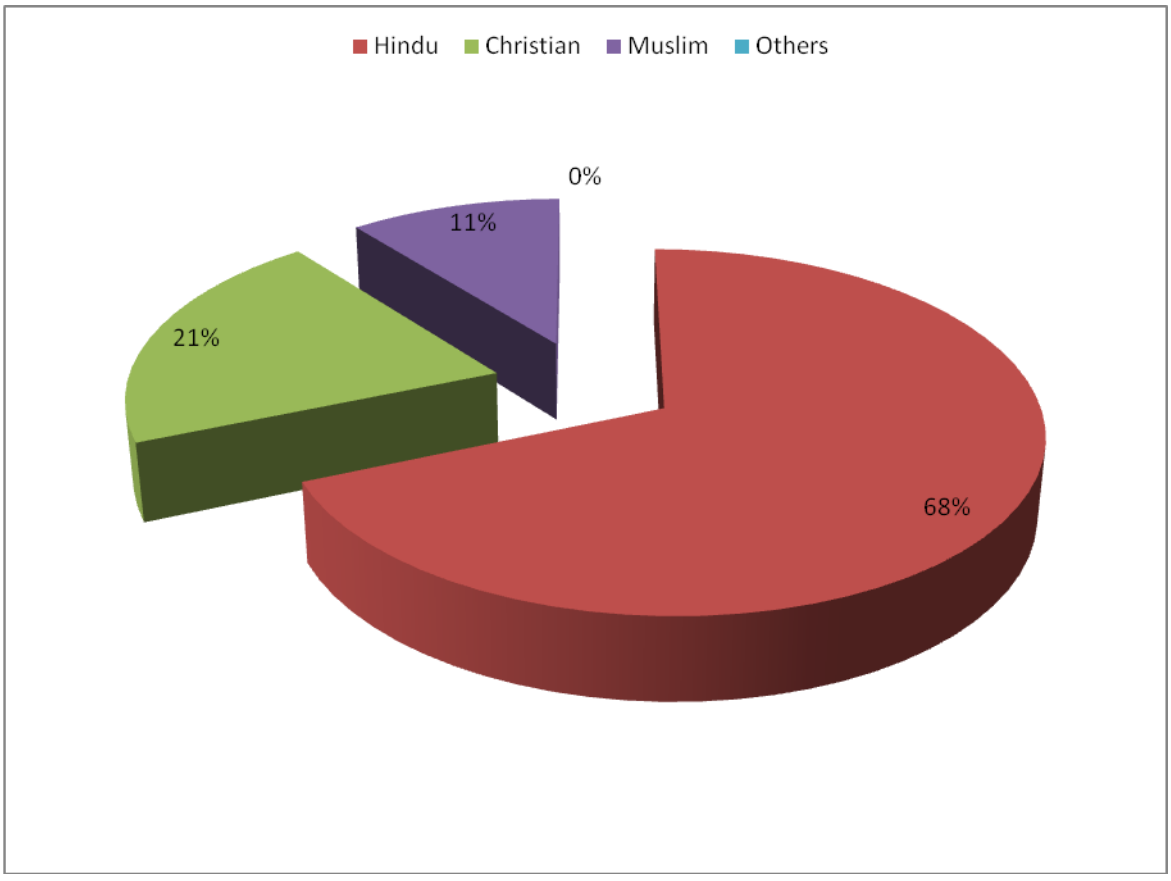


Figure 4: Frequency and Percentage distributions of Religion

SECTION-B

Table 2: Frequency and percentage distribution of low visual acuity

N=150

LOW VISUAL ACUITY					
6/9		**6/12**		**6/18**	
No.	**%**	**No.**	**%**	**No.**	**%**
107	71.34	35	23.33	8	5.33

The above table shows that 150 school age children were having mild vision loss.

Among which 107{71.34%} had low visual acuity with a scale of 6/9 (both eyes), 35(23.33%) of them had a scale of 6/12 (both eyes) and 8(5.33%) of them had a scale of 6/18 (both eyes).

SECTION – C

Table 3a: Frequency and Percentage distribution of influencing factors environmental Factors

N=150

Sl. No	Environmental Factors	No.	%
1	**Type of light**		
	Tube light	133	88.67
	Dim light	10	6.67
	Other light	7	4.67
2	**Hours of spending**		
	30 - 40 minutes	27	18
	40 - 1 hour	67	44.67
	More than 1 hour	56	37.33
3	**Position of the child**		
	Sitting	119	79.33
	Lying	31	20.67
	Semi-Sitting	0	0
4	**Distance between eyes and books**		
	Normal distance (30 cms)	45	30
	Near (Below 30 cms)	105	70
	Far (Above 30 cms)	0	0
5	**Place of reading books**		
	At home	146	97.33
	Bus	4	2.67
	Classroom	0	0
6	**Child engaged with other close work**		
	Playing or doing home work in computer	20	13.33
	Playing video games	80	53.33

Sl. No	Environmental Factors	No.	%
	Others	50	33.33
7	**Habit of watching television**		
	Everyday	133	88.67
	Weekend	13	8.67
	Only during vacation	4	2.67
8	**Hours of watching television in a day**		
	Only for an hour	5	3.33
	Less than 3 hours	17	11.33
	More than 3 hours	128	85.33
9	**Place of television**		
	Hall	131	87.33
	Bedroom	18	12
	Dining hall	1	0.67
10	**Placement of television**		
	Below the eye level	9	6
	At the eye level	111	74
	Above the eye level	30	20
11	**Position of child while watching television**		
	Sitting	84	56
	Lying	65	43.33
	Semi reclined	1	0.67
12	**Distance between child and television**		
	Less than 2 mtrs (very near)	81	54
	2 - 3 mts (near)	58	38.67
	4 mts and more (Far)	11	7.33
13	**Type of room during watching television**		
	Dark room	24	16
	Lightened room	77	51.33
	Dim light	49	32.67

The above table shows the frequency and percentage distribution of environmental factors.

Regarding type of light majority 133(88.67%) were using tubelight & 7(4.67%) were using other light.Regarding hours of spending home work majority 67(44.67%) were spend 40 -1 hr & 27(18%) were spend 30 -40 min.

Regarding position of child during home work majority 119(79.33%) were sitting during home works & 31(20.67%) were lying during home work.Considering distance between eyes and books (reading) majority 105(70%) were read at below 30cm & 45(30%) were followed normal distance in reading.

Regarding place of reading books majority 146(97.33) were read at home & 4(2.67%) were read in bus.Regarding engagement with other close work majority 80(53.33%) were playing video games & 20(13.33%) were playing or doing home work in computer.

Considering the habit of watching television, majority 133(88.67%) were watching every day & 4(2.67%) were watching only during vacation.Regarding hours of watching television in a day, majority 128(85.33%) were spending more than 3hrs l & 5(3.33) were watching only for an hour.

Regarding television room, majority 131(87.33%) were placed in hall, 1(0.67%) were placed in dining hall.Considering placement of television majority 111(74%) were see at the eye level , 9(6%) were below the eye level

Table 3b: Frequency and percentage distribution of heredity Factors

N = 150

	Heredity Factors	No.	%
1	**Family history of wearing spectacles**		
	Yes	54	36.0
	No	96	64.0
2	**Reason for wearing spectacles**		
	Long sightedness	15	27.78
	Short sightedness	18	33.33
	Others	21	38.89
3	**Age at 1st spectacles**		
	At child age	12	22.22
	Adult age	32	59.26
	Old age	10	18.52

The above table shows the frequency and percentage distribution of heredity factors.

Regarding family history of wearing spectacles majority 96(64%) were no history & 54(36%) were family history of spectacles.

Considering the reason for spectacles, majority 21(38.89%) were others & 15(27.78%) were long sightedness.

Regarding 1st spectacles, majority 32(59.26%) were worn at adult age, 10(18.52%) were worn at old age.

Table 3c: Frequency and percentage distribution of Congenital Factors

N = 150

	Congenital Factors	No.	%
1	**Type of marriage**		
	1st degree consanguinous	3	2.0
	2nd degree consanguinous	16	10.67
	Non consanguinous	131	87.33
2	**Problem during pregnancy**		
	Yes	12	8.0
	No	138	92.0
3	**Type of problem**		
	Anemia	12	100.0
	Infection	0	0
	Others	0	9

The above table shows frequency and percentage distribution of congenital factors.

Regarding type of marriage, majority 131 (87.33%) were non consanguineous & 3 (2%) were 1st degree consanguineous marriage.

Regarding problem during pregnant, majority 138 (92%) were says no problem & 12 (8%) were says problem.

Regarding type of problem, majority 12 (100 %) were anemic

Table 3d: Frequency and percentage of Vitamin A Deficiency factors

N=150

Sl. No.	Vitamin A Deficiency Factors	No.	%
1	a. Child who have had colostrum	150	100
	b. Child who have not had colostrum	0	0
2	a. Child who have been breastfed up to 2 yrs	91	60.67
	b. Child who have not been breasted up to 2 yrs	59	39.33
3	a. Child who had taken Vitamin A supplement	84	56
	b. Child who had not taken Vitamin A supplement	66	44
4	a. Child affected by measles	0	0
	b. Child not affected by measles	150	100
5	a. Child complaints of difficulty in reading in dim - light	12	8
	b. Child doesn't complaints of difficulty in reading in dim – light	138	92
6	a. Child takes green leafy vegetables weekly	150	100
	b. Child doesn't take green leafy vegetables weekly	0	0
7	a. Child takes Vegetables like carrot &pumpkin	134	89.33
	b. Child doesn't take Vegetables like carrot &pumpkin	16	10.67
8	a. Child takes all types of yellow &orange fruits daily	93	62
	b. Child doesn't take all types of yellow &orange fruits daily	57	38
9	a. Child take milk products daily	120	80
	b. Child doesn't take products daily	30	20

The above table shows frequency and percentage distribution of vitamin A deficiency factors.

Regarding colostrums, majority 150(100%) child had coloustrum.

Regarding Breast feeding majority 91(60.67%) have been breast fed up to 2 yrs & 59(39.33%) were not fed up to 2 yrs.

Considering Vitamin A supplement, majority 84(56%) were immunized & 66(44%) were not immunized with vitamin A.

Regarding measles, majority 150(100%) were not affected with measles.

Considering that reading in dim light, majority 138(92%) have no complaints of difficulty in reading & 12(8%) were difficulty in reading in dim light.

Regarding green leafy, majority 150(100%) were takes weekly.

Regarding vegetables, majority 134(89.33) were giving vegetables to their child, 16(10.67%) were not giving vegetables to their child.

Regarding fruits, majority 93(62%) were giving all types of yellow & orange fruits daily & 57(38%) were not giving fruits daily.

Considering milk products, majority 120(80%) were taking milk products daily & 30(20%) were not taking.

SECTION – D

Table 4: Association of low visual acuity with their demographic variables

N=150

Demographic Variables	LOW VISUAL ACUITY						Chi-Square Value
	6/9		6/12		6/18		
	No.	%	No.	%	No.	%	
Age of the children							$\chi^2 = 4.729$ d.f = 4 N.S
6 - 8 years	35	23.33	14	9.33	2	1.33	
8 - 10 years	41	27.33	17	11.33	4	2.67	
10 - 12 years	31	20.67	4	2.67	2	1.33	
Gender							$\chi^2 = 5.977$ d.f = 2 S*
Male	52	34.67	22	14.67	7	4.67	
Female	55	36.67	13	8.67	1	0.67	
Educational status of the child							$\chi^2 = 4.729$ d.f = 4 N.S
1st - 3rd std	35	23.33	14	9.33	2	1.33	
3rd - 5th std	41	27.33	17	11.33	4	2.67	
5th - 7th std	31	20.67	4	2.67	2	1.33	
Religion of the children							$\chi^2 = 10.04$ d.f = 4 S*
Hindu	67	44.67	30	20.00	6	4.00	
Christian	27	18.00	4	2.67	0	0.00	
Muslim	13	8.67	1	0.67	2	1.33	
Others	0	0.00	0	0.00	0	0.00	
Type of the family							$\chi^2 = 1.143$ d.f = 2 N.S
Nuclear	70	46.67	26	17.33	6	4.00	
Joint	37	24.67	9	6.00	2	1.33	
Broken	0	0.00	0	0.00	0	0.00	
No. of siblings in the family							$\chi^2 = 0.752$ d.f = 4
1	20	13.33	7	4.67	1	0.67	
2	67	44.67	23	15.33	5	3.33	

Demographic Variables	LOW VISUAL ACUITY						Chi-Square Value
	6/9		6/12		6/18		
	No.	%	No.	%	No.	%	
More than 2	20	13.33	5	3.33	2	1.33	N.S
Nil	0	0.00	0	0.00	0	0.00	
Educational status of the father							
Illiterate	2	1.33	2	1.33	0	0.00	$\chi^2 = 7.326$
Primary	27	18.00	4	2.67	0	0.00	d.f = 8
Secondary	47	31.33	17	11.33	5	3.33	N.S
Higher secondary	20	13.33	9	6.00	2	1.33	
Graduate	11	7.33	3	2.00	1	0.67	
Educational status of the mother							
Illiterate	16	10.67	5	3.33	1	0.67	$\chi^2 = 16.73$
Primary	40	26.67	4	2.67	0	0.00	d.f = 6
Secondary	33	22.00	21	14.00	4	2.67	S*
Higher secondary	18	12.00	5	3.33	3	2.00	
Graduate	0	0.00	0	0.00	0	0.00	
Occupation							$\chi^2 = 2.878$
Sedentary worker	28	18.67	8	5.33	3	2.00	d.f = 4
Moderate worker	52	34.67	18	12.00	5	3.33	N.S
Heavy worker	27	18.00	9	6.00	0	0.00	
Family monthly income							
Below Rs.5000	19	12.67	8	5.33	0	0.00	$\chi^2 = 3.324$
Rs.5001 to 10000	56	37.33	20	13.33	5	3.33	d.f = 4
Rs.10001 to 15000	32	21.33	7	4.67	3	2.00	N.S
Above Rs.15000	0	0.00	0	0.00	0	0.00	

*p<0.05, S – Significant, N.S – Not Significant

The above table shows the association of low visual acuity with demography variable with respect to all the Gender.

The analysis revealed that the demography variable gender, relgion,and educational status of the mother had statistically significant with the level of low visual acuity at P < 0.005 level and other demography variables had no statistically significant association with the level of low visual acuity.

SECTION – E

Table 5: Association of low visual acuity with Environmental factors

N=150

LOW VISUAL ACUITY							Chi-Square Value
Environmental Factors	**6/9**		**6/12**		**6/18**		
	No.	**%**	**No.**	**%**	**No.**	**%**	
Type of light							$\chi^2 = 5.15$ d.f = 4 N.S
Tube light	91	60.67	34	22.67	8	5.33	
Dim light	9	6.00	1	0.67	0	0.00	
Other light	7	4.67	0	0.00	0	0.00	
Hours of spending homework							$\chi^2 = 19.53$ d.f = 4 S***
30 - 40 minutes	17	11.33	5	3.33	5	3.33	
40 - 1 hour	43	28.67	23	15.33	1	0.67	
More than 1 hour	47	31.33	7	4.67	2	1.33	
Position during homework							$\chi^2 = 1.164$ d.f = 2 N.S
Sitting	83	55.33	30	20.00	6	4.00	
Lying	24	16.00	5	3.33	2	1.33	
Semi-Sitting	0	0.00	0	0.00	0	0.00	
Distance between eyes and books							$\chi^2 = 5.935$ d.f = 2 N.S
Normal distance (30 cms)	26	17.33	15	10.00	4	2.67	
Near (Below 30 cms)	81	54.00	20	13.33	4	2.67	
Far (Above 30 cms)	0	0.00	0	0.00	0	0.00	
Place of reading books							$\chi^2 = 1.65$ d.f = 2 N.S
At home	103	68.67	35	23.33	8	5.33	
Bus	4	2.67	0	0.00	0	0.00	
Classroom	0	0.00	0	0.00	0	0.00	

LOW VISUAL ACUITY							Chi-Square Value
Environmental Factors	**6/9**		**6/12**		**6/18**		
	No.	**%**	**No.**	**%**	**No.**	**%**	
Child engaged with other close work							$\chi^2 = 4.741$ d.f = 4 N.S
Playing or doing home work in computer	16	10.67	4	2.67	0	0.00	
Playing video games	53	35.33	20	13.33	7	4.67	
Others	38	25.33	11	7.33	1	0.67	
Habit of watching television							$\chi^2 = 4.731$ d.f = 4 N.S
Everyday	94	62.67	33	22.00	6	4.00	
Weekend	9	6.00	2	1.33	2	1.33	
Only during vacation	4	2.67	0	0.00	0	0.00	
Hours of watching television in a day							$\chi^2 = 23.86$ d.f = 4 S***
Only for an hour	5	3.33	0	0.00	0	0.00	
Less than 3 hours	9	6.00	3	2.00	5	3.33	
More than 3 hours	93	62.00	32	21.33	3	2.00	
Place of television							$\chi^2 = 3.14$ d.f = 4 N.S
Hall	92	61.33	33	22.00	6	4.00	
Bedroom	14	9.33	2	1.33	2	1.33	
Dining hall	1	0.67	0	0.00	0	0.00	
Placement of television							$\chi^2 = 1.936$ d.f = 4 N.S
Below the eye level	8	5.33	1	0.67	0	0.00	
At the eye level	77	51.33	28	18.67	6	4.00	
Above the eye level	22	14.67	6	4.00	2	1.33	
Position of child while watching television							$\chi^2 = 2.47$ d.f = 4 N.S
Sitting	61	40.67	17	11.33	6	4.00	
Lying	45	30.00	18	12.00	2	1.33	
Semi reclined	1	0.67	0	0.00	0	0.00	
Distance between child and television							$\chi^2 = 6.609$ d.f = 4 N.S
Less than 2 mtrs (very near)	60	40.00	16	10.67	5	3.33	
2 - 3 mts (near)	40	26.67	17	11.33	1	0.67	
4 mts and more (Far)	7	4.67	2	1.33	2	1.33	
Type of room during watching television							$\chi^2 = 4.581$ d.f = 4 N.S
Dark room	18	12.00	4	2.67	2	1.33	
Lightened room	59	39.33	15	10.00	3	2.00	

LOW VISUAL ACUITY							Chi-Square Value
Environmental Factors	**6/9**		**6/12**		**6/18**		
	No.	**%**	**No.**	**%**	**No.**	**%**	
Dim light	30	20.00	16	10.67	3	2.00	

***p<0.001, S – Significant, N.S – Not Significant

The above table shows the association of low visual acuity with enviromental factors revealed that hours of spending homework, hours of watching television were significant others are not significant

Table 5b: Association of low visual acuity with heredity factors

N=150

Heredity Factors	**LOW VISUAL ACUITY**						**Chi-Square Value**
	6/9		**6/12**		**6/18**		
	No.	**%**	**No.**	**%**	**No.**	**%**	
Family history of wearing spectacles							$\chi^2 = 2.026$ d.f = 2 N.S
Yes	40	26.67	13	8.67	1	0.67	
No	67	44.67	22	14.67	7	4.67	

N.S – Not Significant

The above table shows the association of low visual acuity with heridity factors were not significant.

Table 5c: Association of Low visual acuity with congenital factors

N=150

Congenital Factors	LOW VISUAL ACUITY						Chi-Square Value
	6/9		6/12		6/18		
	No.	%	No.	%	No.	%	
Type of marriage							$\chi^2 = 7.975$ d.f = 4 N.S
1st degree consanguinous	3	2.00	0	0.00	0	0.00	
2nd degree consanguinous	14	9.33	0	0.00	2	1.33	
Non consanguinous	90	60.00	35	23.33	6	4.00	
Problem during pregnancy							$\chi^2 = 1.207$ d.f = 2 N.S
Yes	10	6.67	2	1.33	0	0.00	
No	97	64.67	33	22.0	8	5.33	

N.S – Not Significant

The above table shows the association of low visual acuity with congenital were not significant.

Table 5d:Association of low visual acuity with vitamin A deficiency factor

N = 150

Vitamin A Deficiency Factors	LOW VISUAL ACUITY						Chi-Square Value
	6/9		6/12		6/18		
	No.	%	No.	%	No.	%	
1a) Child who have had colustrum	107	71.33	35	23.33	8	5.33	$\chi^2 = 0$
1b) Child who have not had colustrum	0	0.00	0	0.00	0	0.00	
2a) Child who have been breast fed upto 2 years	63	42.00	22	14.67	6	4.00	$\chi^2 = 0.902$ d.f = 2 N.S
2b) Child who have not been breast fed upto 2 years	44	29.33	13	8.67	2	1.33	
3a) Child who had taken vitamin A supplement.	61	40.67	20	13.33	3	2.00	$\chi^2 = 1.739$ d.f = 2 N.S
3b) Child who had not taken vitamin A supplement.	46	30.67	15	10.00	5	3.33	
4a) Child affected by measles.	0	0.00	0	0.00	0	0.00	$\chi^2 = 0$
4b) Child not affected by measles.	107	71.33	35	23.33	8	5.33	
5a) Child compliance of difficulty in reading in dim light.	7	4.67	3	2.00	2	1.33	$\chi^2 = 3.465$ d.f = 2 N.S
5b) Child does not compliance of difficulty in reading in dim light.	100	66.67	32	21.33	6	4.00	
6a) Child takes green leafy vegetables weekly.	107	71.33	35	23.33	8	5.33	$\chi^2 = 0$
6b) Child does not take green leafy vegetables weekly.	0	0.00	0	0.00	0	0.00	
7a) Child takes vegetables like carrot and pumpkin.	101	67.33	28	18.67	5	3.33	$\chi^2 = 12.12$

7b) Child does not take vegetables like carrot and pumpkin.	6	4.00	7	4.67	3	2.00	d.f = 2 S***
8a) Child takes all types of yellow and orange fruits daily.	71	47.33	20	13.33	2	1.33	χ^2 = 5.86 d.f = 2 N.S
8b) Child does not take all types of yellow and orange fruits daily.	36	24.00	15	10.00	6	4.00	
9a) Child takes milk products daily.	84	56.00	30	20.00	6	4.00	χ^2 = 0.989 d.f = 2 N.S
9b) Child does not take milk products daily.	23	15.33	5	3.33	2	1.33	

***p<0.001, S – Significant, N.S – Not Significant

The above table shows the association of low visual acuity with vitamin A deficiency factors were significant in giving vegetables especially carrot and pumpkin.

CHAPTER – V

DISCUSSION

This chapter discuss the findings of the study desired from statistical analysis with its pertinence of the objectives and related literature of the study. The problem stated was "A study to assess the low visual accuity and its influencing factor among school age children in selected area, Poonamallee, Chennai, 2010 – 2011".

The objectives of the study were as follows:

1. To assess the level of low visual acuity among school age children.
2. To assess the influencing factors of low visual acuity.
3. To associate the low visual acuity with demographic variables.
4. To associate the low visual acuity with influencing factors.

The demographic variables selected for the study were Age, Gender, Educational status of the child, Father and mother, religion, type of family, no of siblings in the family occupation, family income.

Frequency and percentage of socio demographic characteristics were as follows.

Nearly (62) 41.33% were in the age group of 8 – 10 yrs., 37 (24.67%) were in the age group of 10 – 12 yrs. Regarding gender majority 81 (54%) were male and 69 (46%) were female; considering educational status of the child, majority 62 (41.33%) were in 3rd –

5th std and 51 (34%) were in 1st – 3rd std. Regards to religion 103 (68.67%) were belongs to Hindu, 16 (10.67%) were Muslim, Regarding type of the family 102 (68%) were in nuclear family and 48 (32%) were joint family considering the number of siblings in the family majority 95 (63.33%) were 2 and 28 (18.67%) were I in number with depicts to educational status of the father 69 (46%) were secondary education and 4 (2.67%) were in illiterate level. Regarding Educational status of the mother majority 58 (38.67%) were secondary education and 22 (14.67%) were illiterate. Considering the occupation, 75 (50%) were moderate worker and 36 (24%) were heavy worker. Regarding family income majority 81 (54%) were earn between Rs. 5001 – 10,000 and 27 (18%) were below Rs.5000.

The first objectives was to assess the level of low visual acuity and its influencing factor among school age children.

The analysis revealed that all school age children 150 (100%) were having mild vision loss. The investigator found that 150 school age children had visual acuity of 6/9 (both eyes) in 107 (71.34%), 35 (23.33%) were 6/12 (both eyes) and 8 (5.33%) were 6/18 (both eyes).

The study findings were consistent with the study findings of Unal Ayranci etal (2009) who also revealed similar results of samples with mild low vision loss.

The second objectives was to assess the influencing factor of low visual acuity among school age children.

The analysis revealed that in environmental factor, 133 (88.67%) were using tube light & 7(4.67%) were using other light during home work. Regarding hours of spending home work majority 67 (44.67%) were spend 40 – 1 hr and 27 (18%) were spend 30 – 40mm. Regarding position of child 119 (79.33%) were sitting during home work., 31 (20.67%) were lying during home work. Considering distance between eyes & books majority 105 (70%) were read at below 30cm 45 (30%) were following normal distance in reading. Regarding place of reading books majority 146 (97.33%) were read at home and 4 (2.67%) were read in thus. Regarding engagement with close work 80 (53.33%) were playing video games & 20 (13.33%) were playing & doing home work in computer. Considering the habit of watching television. Majority 133 (88.67%) were watching every day and 4 (2.67%) were watching only for an hour. Regarding television room, Majority 131 (87.33%) were placed in hall, 1 (0.67%) were kept in dining hall. Considering

placement of television, 111 (74%) were see at the eye level, 9 (6%) were see below the eye level.

The analysis revealed that in vitamin A defuency factor majority 150 child had colostrums.

The study findings were consistent with the study findings of Tanzania investigated the prevalence and causes of low vision among school children in Kibaha district. A total of 400 school children were screened, 38 (9.5%) children had lowvision and 65% of children with congenital anomalies and 55% of children with refractive errors, 2 children had corneal scars. The main causes are congenital anomalies.

The third objectives was to associate the low visual acuity with demography variables.

The analysis revealed that there was high significant association of demographic variables such as Gender χ^2= 5.977 at P < 0.05 Religion χ^2 = 10.04 at P < 0.05, Educational status of the mother χ^2 = 16.73 at P < 0.05 level and other variables are not significantly associated.

The study findings were consistent with the study findings of Rose etal (2005) who had narrated that there was a significant association between gender and children of low socio economic status.

The fourth objectives was to associate the low visual acuity with influencing factor among school age children.

The analysis revealed that there was high significant association of low visual acuity with influencing factors such as environmental factor, hours of spending home work. χ^2 = 19.53 at P < 0.001 level and hours of watching television χ^2 = 23.86 at P < 0.001 level and vitamin – A deficiency factor, taking vegetables like carrot and pumpkin χ^2 = 12.12 at P < 0.001 level.

The study findings were consistent with the study findings of Aftab Ahmad etal (2007) who found that genetic factor had significant association with low visual acuity as an influencing factor.

The conceptual Framework was based on modified imagine king's god attainment theory. The model was described as follows. The investigator perceived that low visual acuity may be high among school age children. Environmental, vitamin A deficiency, heredity congenital factors may contribute to low visual acuity. Parents of school age children may have lack of knowledge on identification & management of low visual acuity & influencing factors. Investigator judged to mobilize the resources of relieve from low visual acuity among school age children.

The overall findings of the study shows that the level of low visual acuity among school age children was 150, (6/9 is 107(71.34%) 6/12 is 35(23.33%), 6/18 is 8(5.33%) in both eyes) and the association of Low visual acuity with influencing factors were environmental & Vitamin A deficiency factors.

The present study revealed that Low visual acuity among school age children is common. Hence pamphlets on prevention of vision loss were distributed to the school are children parents.

The assumption of the study made were,

1. Low visual acuity may be more prevalent among school age children.
2. Environmental vitamin A deficiency, heredity, congenital factors may contribute to low visual acuity.

The first assumption that there may be a low visual acuity is hear by accepted because the present study result also proved that 150 school age chldren also had low visual acuity.

The second assumption that the influencing factors to low visual acuity is hear by accepted because the present study result also have proved that environmental factor such as hours of spending home work...hours of watching television & Vitamin A deficiency factors such as taking vegetables like carrot and pumpkin.

The researcher could improve the Knowledge of parents on identification and management of Low visual acuity and influencing factors.

CHAPTER – VI

SUMMARY, RECOMMENDATIONS, NURSING IMPLICATIONS AND LIMITATIONS

This chapter presents the summary, conclusion nursing implications, recommendations and limitations of the study based on objectives selected.

SUMMARY

International studies shows that approximately 25% school age children carry some form of visual deficiency. 90% of children who are blind don't go to school so Blindness is the global public health problem with approximately 45 million people blind and another 135 million people visually impaired worldwide. Blindness in children is often preventable if communities and parents become aware of the causes.

The objectives of the study were

1. To assess the level of low visual acuity among school age children.
2. To assess the influencing factors among school age children.
3. To associate the low visual acuity with demographic variables among school age children.
4. To associate the low visual acuity with influencing factors among school age children.

The assumption of the study were

1. Low visual acuity may be more prevalent among school age children

2. Environmental factor, congenital factors may contribute to low visual acuity.

Extensive review of literature, investigator's professional experience and expect guidance from the field of child health nursing lead the investigator to design the methodology to develop the tool for data collection.

The conceptual framework of the study was based on imagine king's goal attainment theory. It provided the comprehensive framework for activity the objectives of the study.

The researcher adopted a descriptive research design to are the low visual acuity and its influencing factors. The study was conducted at Poonamallee. A non – purposive sampling each was adopted for the study. The Investigator selected 150 school age children as the study samples.

The tool consisted of socio demographic variables and validated by 5 expects. Reliability of the tool was established by test retest method.

The pilot study was done in the cibore stated setting and the finding revealed the feasibility & practicabiling of the tool & the study. The main study was done after setting formal.

Permission from the president of the area. 150 school age children were selected by non-probability purposive sampling technique the sample was assessed by snellen's visual acuity scale & date was collected from parents of school age children. The data collected were analyzed by descriptive & inferential statistics.

The findings of the study revealed that the level of Low visual acuity among school age children Majority 107(71.34%) of children 6/9, 35(23.33%) were 6/12, 8(5.33%) were 6/18 in both eyes. Totally 150 had Low visual acuity and association of Low visual acuity with demographic variables shows that gender, religion, educational status of the mother had statistically significant at $p<0.05$ level and Association of low visual acuity with influencing factors. Environmental & vitamin A deficiency factors had statistically significant at $p<0.001$.

NURSING IMPLICATIONS

The investigator has derived the following implication from the study which are vital concern in the field of nursing practice, nursing administration, nursing education, and nursing research.

Nursing Practice

The community health nurses have to play a vital role in enabling effective identifying and management of low visual acuity.This can be facilitated by motivating the nurse to Insist the practice of among school age children.

Educating the mother regarding influencing factors .

Teach parents and teachers about the identification and management of low visual acuity and influencing factors during school health programme.

Nursing Education

Ensure that students to learn about identification and management of low visual acuity and its influencing factors.

The student nurses should have involvement in the conduct workshop, seminars related to low visual acuity and its influencing factors being organized by the same or any other institution.

Articles on effects and prevention of childhood blindness should be made available in the nursing journals.

Make available literature related to low visual acuity and its influencing factors among school age children in the library for student reference.

Nursing Administration

Conducting inservice education programme in identification and management of low visual acuity and its influencing factors in school age children and its application in various field.

Provide oppurtunities for nurses to attend training program on identification and management of low visual acuity.

Improve data on identification and management of low visual acuity in children in various settings.

Nursing Research

Encourage further studies on assessment of low visual acuity and factors influencing of low visual acuity in children among teachers.

Disseminate the findings through conference seminars, publication in proffessional, national & international journals & world wide web site.

RECOMMENDATIONS

The investigator recommends the following studies to strengthen nursing.

1. A similar study can be conducted on a larger scale.
2. A experimental study can be conducted to assess the effectiveness of STP in identification and management of low visual acuity.
3. A case control study can be conducted to assess the effectiveness of childhood low visual acuity in adult hood.
4. A comparative study can be carried out to assess the low visual acuity in rural and urban children.

LIMITATION

Time constraints was limitation, as the researcher took 20 – 30 minutes to collect the data from each – samples.

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APPENDIX – A

LIST OF EXPERTS FOR CONTENT VALIDITY

1. **Dr.Sathyan, M.B.B.S., D.C.H.,**
   Consultant Pediatrist,
   Pattabiram,
   Chennai.

2. **Mrs.Anitha Rajendra babu, R.N,R.M., M.Sc(N).,**
   Principal,
   Rajalakshmi College of Nursing,
   Thandalam.

3. Mrs.Anitha , M.Sc(N).,
   Reader,
   Sri Ramachandra College of Nursing,
   Chennai.

4. **Mrs.Susan R.N, R.M., M.Sc(N).,**
   Head of the Department,
   Child Health Nursing,
   Omayal Aachi College of Nursing,
   King Cross Road, S.M.Nagar,
   Avadi, Chennai – 600 062.

5. **Dr.Sumathi, D.O**
   Assistant Surgeon,
   Government Hospital,
   Arcot.

6. **Ms.Indhu, D.OPT**
   Opthometrist
   Purple optical
   Poonamallee

LETTER SEEKING EXPERTS OPINION FOR CONTENT VALIDITY

From

Mrs.J.GNANADEEPA
M.Sc.(N) I Year,
Vel R.S Medical College – College of Nursing,
Avadi, Chennai – 600 062.

To

Respected Madam/Sir,

Sub: Requisition for expert opinion on suggestion for content validity of the tools.

I am Mrs. J.GNANADEEPA, a student of M.Sc.(Nursing)- I year at Vel R.S Medical College - College of Nursing, Avadi, Chennai – 62, affiliated to Dr.M.G.R.Medical University, Chennai.

As a partial fulfillment of the requirement in the M.Sc. Nursing Programme, I have to complete a dissertation the topic I have selected is **" A study to assess the Low visual acuity and its influencing factors among school age children in poonamallee , Chennai- 2010".**

Herewith I am sending the developed tools for content validity and for your expert opinion & valuable suggestions.

Thanking you,

Yours sincerely,

(Mrs.J.GNANADEEPA)

Enclosures:

1. Statement and objectives of the study
2. Blue print of the tools
3. Content validity certificate

CERTIFICATE FOR CONTENT VALIDITY

This is to certify that the tools developed by, **Mrs.J.GNANADEEPA**, M.Sc. Nursing student Vel R.S. Medical College – College of Nursing, Chennai on the topic, "**"A study to assess the low visual acuity and its influencing factors among school age children in Poonamallee, Chennai – 2010"** is validated by the undersigned and she can proceed with this tool to conduct the main study.

Place :

Date : **Signature**

APPENDIX – B

INTRODUCTION

Dear Participants,

I am**,** Mrs. J.GNANADEEPA M.Sc(N), II year student from Vel R.S.Medical College - College of Nursing, Avadi, Chennai. I would like to assess the low visual acuity and its influencing factors among school age children in Poonamallee. I assure that the responses given by you will be used only for my study purpose and strict confidentiality will be maintained. So please feel free in answering the questions. This will be promoting your welfare. So, I request you to kindly give your full co-operation and willingness.

Thanking you.

PART – I

Screening of visual acuity.

PART – II: Demographic Variables

1. Age of the children
    a. 6 – 8 years
    b. 8 – 10 years
    c. 10 – 12 years

2. Gender
    a. Male
    b. Female

3. Educational status of the child
    a. 1^{st} – 3^{rd} std
    b. 3^{rd} – 5^{th} std
    c. 5^{th} – 7^{th} std

4. Religion of the children
    a. Hindu
    b. Christian
    c. Muslim
    d. Others

5. Type of family
    a. Nuclear
    b. Joint
    c. Broken

6. No. of siblings in the family
    a. 1
    b. 2
    c. More than 2
    d. Nil

7. Educational status of the father
    a. Illiterate
    b. Primary
    c. Secondary
    d. Higher secondary
    e. Graduate

8. Educational status of the mother
    a. Illiterate
    b. Primary
    c. Secondary
    d. Higher secondary
    e. Graduate

9. Occupation
    a. Sedentary worker
    b. Moderate worker
    c. Heavy worker

10. Family monthly income
    a. Below Rs.5000
    b. Rs.5001 to 10000
    c. Rs.10001 to 15000
    d. Above 15001

INFLUENCING FACTORS

Environmental Factor (Closework, Watching Televison/Computer)

1. What type of light did your child use while reading or writing home work?
    a. Tube light
    b. Dim light
    c. Other light

2. How many hours did your child spend with homework?
    a. 30 – 40 minutes
    b. 40 – 1 hour
    c. More than 1 hour

3. What is the position of your child while doing home work?
    a. Sitting
    b. Lying
    c. Semi sitting

4. What is the distance between the child eyes and the book while reading?
    a. Normal distance (30 cms)
    b. Near (below 30 cms)
    c. Far (above 30 cms)

5. Where did your child read the book most of the time?
    a. At home
    b. Bus
    c. Classroom

6. Is your child engaged with any other close work?
    a. Playing or doing home work in computer
    b. Playing video games
    c. Others

7. How often did your child watch television?
    a. Everyday
    b. Weekend
    c. Only during vacation

8. How many hours does your child watch television in a day?
    a. Only for an hour
    b. Less than 3 hours
    c. More than 3 hours

9. Which room will you place the television?
    a. Hall
    b. Bedroom
    c. Dinning hall

10. Specify the placement of television?
    a. Below the eye level
    b. At the eye level
    c. Above the eye level

11. What is the position, your child assume generally while watching television?
    a. Sitting
    b. Lying
    c. Semi reclined

12. What is the distance will your child keep from television screen?
    a. Less than 2 mtrs (very near)
    b. 2m- 3 mtrs (near)
    c. 4 mtrs and more (Far)

13. What type of room did your child prefer to watch television?
    a. Dark room
    b. Lightened room
    c. Dim light

GENETIC FACTOR

14. Is anybody in your family wearing spectacles?
    a. Yes
    b. No

    If Yes,

14.a. What is the reason for wearing spectacles?

a. Light sightedness

b. Short sightedness

c. Others

14.b. When did they advised the 1st spectacles?

a. At child age

b. Adult age

c. Old age

CONGENITAL FACTOR

15. Is your marriage is

a. 1st degree consanguinous

b. 2nd degree consanguinous

c. Non consanguinous

16. Did you face any problem during pregnancy?

a. Yes

b. No

If yes,

16.a. What type of problem?

a. Anemia

b. Infection

c. Others

VITAMIN A DEFICIENCY FACTORS:

17. Have you given colustrum for your child?	Yes	No
18. Have your breastfed your child upto 2 years?	Yes	No
19. Are you immunized your child with vitamin A supplement?	Yes	No
20. Is the measles affected your child?	Yes	No
21. Is your child have complaints of difficulty in reading in dim light?	Yes	No
22. Do you add green leafy weekly?	Yes	No
23. Do you give vegetables especially carrots and pumpkin?	Yes	No
24. Do you give all types of yellow and orange fruits daily	Yes	No
25. Did your child take milk products daily?	Yes	No

முகவுரை

வணக்கம்.

நான் வேல் ஆர்.எஸ் மருத்துவ கல்லூரி-செவிலியர் கல்லூரியில் இரண்டாம் ஆண்டு முதுகலை செவிலியர் கல்வி பயிலும் மாணவி. நான் என் படிப்பின் ஒரு பகுதியாக **பள்ளி செல்லும் குழந்தைகளின் கண்பார்வைத்திறன் குறைபாடு மற்றும் அதன் காரணிகள் கண்டறியும்** ஒரு ஆய்வை நடத்துகின்றேன். இதன் தொடர்பாக நான் தங்களை எனது ஆய்வின் பங்கேற்பாளராக இணைத்துக் கொள்ள மிக தாழ்மையுடன் கேட்டுக்கொள்கிறேன். இதன் தொடர்பாக நான் கேட்கும் கேள்விகளுக்கு சரியான உங்கள் பதிலை தெரிவிக்கவும். உங்கள் பதிலை நான் என் ஆய்விற்காக மட்டுமே பயன் படுத்துவேன் என்று உறுதியளிக்கிறேன்.

நன்றி!

பகுதி - I

1. குழந்தைகளின் கண்பார்வைத்திறன்

பகுதி - II

மின்குல காரணிகள்:

1. குழந்தையின் வயது?

    அ) 6 – 8 வயது

    ஆ) 8 – 10 வயது

    இ) 10 – 12 வயது

2. குழந்தையின் பாலினம்?

    அ) ஆண்

    ஆ) பெண்

3. குழந்தையின் கல்வித்ததகுதி?

    அ) 1 – 3 ஆம் வகுப்பு

    ஆ) 3 – 5 ஆம் வகுப்பு

    இ) 5 – 7 ஆம் வகுப்பு

4. குழந்தையின் மதம்?

    அ) இந்து

    ஆ) கிருஸ்துவம்

    இ) முஸ்லீம்

    ஈ) பிற மதத்தினர்

5. எந்த வகையைச் சார்ந்த குடும்பம்?

    அ) தனி குடும்பம்

    ஆ) கூட்டு குடும்பம்

    இ) உடைந்த குடும்பம்

6. குழந்தையின் உடன் பிறந்தவர்கள்?

அ) ஒன்று

ஆ) இரண்டு

இ) இரண்டிற்கு மேல்

ஈ) எவரும் இல்லை

7. தந்தையின் கல்வித்தகுத?

அ) கல்லாதவர்

ஆ) ஆரம்பக் கல்வி

இ) இரண்டாம் நிலை கல்வி

ஈ) மேல் நிலைக் கல்வி

உ) பட்டதாரி

8. தாயின் கல்வித்தகுதி?

அ) கல்லாதவர்

ஆ) ஆரம்பக் கல்வி

இ) இரண்டாம் நிலை கல்வி

ஈ) மேல் நிலைக் கல்வி

உ) பட்டதாரி

9. பெற்றோரின் தொழில்?

அ) அமர்ந்து செய்யும் வேலை

ஆ) நடுதரமான வேலை

இ) பலத்த வேலை

10. குடும்பத்தின் மாத வருமானம்?

அ) ரூ.5,001 – ரூ.10,000

ஆ) ரூ.5,001 – ரூ.15,000

இ) ரூ.15,000க்கு மேல்

பகுதி - III

சூழ்நிலைக்கலைக் காரணங்கள் (தொலைக்காட்சி கணிப்பொறி பார்ப்பதால் மற்றும் அருகில் செய்யும் வேலை)

1. **படிக்கும் பொழுது அல்லது வீட்டு பாடம் செய்யும் பொழுது உங்கள் குழந்தை எந்த வகையான வெளிச்சத்தை பயன்படுத்துகிறார்கள்?**

   அ) குழல் வெளிச்சம்

   ஆ) மிதமான வெளிச்சம்

   இ) வேறு ஏதேனும் வெளிச்சத்தில்

2. **உங்கள் குழந்தை வீட்டு பாடத்தை முடிக்க எத்தனை மணிதுளிகள் எடுத்து கொள்கிறார்கள்?**

   அ) 30 – 40 நிமிடம்

   ஆ) 40 நிமிடம் – 1 மணி நேரம்

   இ) 1 மணி நேரத்திற்கு மேல்

3. **உங்கள் குழந்தை எந்த நிலையில் இருந்து விட்டு பாடத்தை செய்கிறார்கள்?**

   அ) அமர்ந்த நிலையில்

   ஆ) படுத்த நிலையில்

   இ) சாய்வட்டமான நிலையில்

4. **படிக்கும் பொழுது உங்கள் குழந்தைகல் கண்ணிற்கும் புத்தகத்திற்கும் இடையே இருக்கும் தொலைவு?**

   அ) சரியான தொலைவு (30 செ.மீ)

   ஆ) அருகில் (30 செ.மீ. குறைவு)

   இ) தூரம் (30 செ.மீ.க்கும் மேல்)

5. **உங்கள் குழந்தை பெரும்பான்மையாக எந்த இடத்தில் படிப்பார்கள்?**

   அ) வீட்டில்

   ஆ) பேருந்தில்

   இ) வகுப்பு அறையில்

6. உங்கள் குழந்தை வேறு எந்த வேலையில் அவர்களை ஈடுபடுத்திக் கொள்கிறார்க?

   அ) கணிப்பொறியில்

   ஆ) வீடியோகேம்

   இ) வேறு ஏதேனும்

7. உங்கள் குழந்தை எப்பொழுதெல்லாம் தொலைக்காட்சி பார்க்கிறார்கள்?

   அ) தினந்தோறும்

   ஆ) வாரக்கடைசியில்

   இ) விடுமுறை நாட்களில்

8. ஒரு நாளில் எத்தனை மணி நேரம் உங்கள் குழந்தை தொலைக்காட்சி பார்க்கிறார்கள்?

   அ) 1 மணி நேரம்

   ஆ) 3 மணி நேரம்

   இ) 3 மணி நேரத்திற்கு மேல்

9. எந்த அறையில் தொலைக்காட்சிப் பெட்டி வைக்கப்பட்டுள்ளது?

   அ) பொது அறை

   ஆ) படுக்கை அறை

   இ) உணவு அறை

10. தொலைக்காட்சி உள்ள இடம்?

    அ) கண் பார்வைக்கு இடைமட்டமாக

    ஆ) கண்பார்வைக்கு கிட்ட

    இ) கண்பார்வைக்கு மேல்

11. உங்கள் குழந்தை பொதுவாக எந்த நிலையில் இருந்து தொலைக்காட்சி பார்க்கிறார்கள்?

    அ) அமர்ந்த நிலையில்

    ஆ) படுத்த நிலையில்

    இ) சாய்வாட்டமான நிலையில்

12. தொலைக்காட்சி பார்க்கும் பொழுது உங்கள் குழந்தை எவ்வளவு தூரம் அமர்ந்து இருக்கிறார்கள்?

அ) 2 மீட்டர்ர்கு குறைவாக (மிக அருகாமையில்)

ஆ) 2 – 3 மீட்டர் (அருகாமையில்)

இ) 4 – மீட்டர் அதற்கும் மேல் (தூரம்)

13. தொலைக்காட்சி பார்க்கும் பொழுது உங்கள் குழந்தை எந்த வகையான விளக்கின் தன்மையை தேர்ந்தெடுப்பார்கள்?

அ) இருட்டு அறை

ஆ) வெளிச்சமான அறை

இ) மிதமான வெளிச்சம்

மரபு காரணங்கள்:

14. உங்கள் குடும்பத்தில் எவரேனும் மூக்கு கண்ணாடி அணிந்துள்ளார்களா?

அ) ஆம்

ஆ) இல்லை

ஆம் எனில்

14.அ) எந்த காரணத்திற்காக அவர்கள் மூக்கு கண்ணாடி அணிந்துள்ளார்கள்?

அ) தூரப்பார்வை

ஆ) கிட்டப்பார்வை

இ) வேறு

14.ஆ) எந்த வயதில் மூக்கு கண்ணாடி அணிந்து கொண்டார்கள்?

அ) சிறு வயதில்

ஆ) இளம் வயதில்

இ) முதிர் வயதில்

15. உங்கள் திருமணம் எவ்வகையைச் சார்ந்தது?

அ) முதல் நிலை சொந்தத்தில்

ஆ) இரண்டாம் நிலை சொந்தத்தில்

இ) அசல்

16. **உங்கள் கற்பகாலத்தில் ஏதேனும் பிரச்சினை இருந்ததா?**

அ) ஆம்

ஆ) இல்லை

ஆம் எனில்

அ) எந்த வகையான பிரச்சினை?

ஆ) இரத்த சோகை

இ) தொற்று நோய்

ஈ) வேறு ஏதேனும்

வைட்டமின் ஏ குறைபாட்டின் காரணங்கள்:

17. **குழந்தைக்கு சீம்பால் கொடுத்துள்ளீர்களா?**

அ) ஆம்

ஆ) இல்லை

18. **உங்கள் குழந்தைக்கு இரண்டு வயது வரை தாய்ப்பால் கொடுத்தீர்களா?**

அ) ஆம்

ஆ) இல்லை

19. **உங்கள் குழந்தை தட்டம்மையால் பாதிக்கப்பட்டார்களா?**

அ) ஆம்

ஆ) இல்லை

20. **உங்கள் குழந்தைக்கு வைட்டமின் - ஏ ஊட்டச்சத்து கொடுத்தீர்களா?**

அ) ஆம்

ஆ) இல்லை

21. **உங்கள் குழந்தை மிதமான வெளிச்சத்தில் படிக்க சிரமப்படுகிறார்களா?**

அ) ஆம்

ஆ) இல்லை

22. **உங்கள் குழந்தைக்கு வாரத்தில் ஒரு முறை கீரை வகை கொடுக்கிறீர்களா?**

    அ) ஆம்

    ஆ) இல்லை

23. **உங்கள் குழந்தைக்கு மஞ்சள் மற்றும் ஆரஞ்சு வகை பழங்கள் தினமும் கொடுக்கிறீர்களா?**

    அ) ஆம்

    ஆ) இல்லை

24. **உங்கள் குழந்தைக்கு எல்லாவகையான காய்கறிகள் கொடுக்கிறீகளா? (கேரட், பூசனி)**

    அ) ஆம்

    ஆ) இல்லை

25. **உங்கள் குழந்தை பால், மற்றும் பால் சார்ந்த உணவு பொருட்களை தினமும் எடுத்துக் கொள்கிறார்களா?**

    அ) ஆம்

    ஆ) இல்லை

VEL R.S. Medical College

(College of Nursing)

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04/05/2010

To

Mrs. D. Manimegalai Devaneliran
The Presicdent
Poonamallee municipality

Sub: Seeking permission for conducting main study.

Respected Sir/Madam,

This is to introduce **Mrs.J.GNANADEEPA (Child Health Nursing) Master Degree Nursing student** of this college. She has selected the following topic for her research study to be submitted to the Tamil Nadu Dr. MGR medical university as partial fulfillment of the master degree in nursing program.

The topic for the study is, **"A Study to Asses the Low visual acuity and its influencing factors among school children in selected settings"**

She is interested in conducting the study at your esteemed community.

I assure you that our student will abide by the rules and regulations of the setting. I request your at most help in regard to the same.

Thanking you,

Place

Date

திருமதி. D. மணிமேகலை தேவேந்திரன்
தலைவர்
பூவிருந்தவல்லி நகராட்சி
திருவள்ளூர் மாவட்டம்.

15-5-10 to 15-6-10

Mrs.M.Anuradha
PRINCIPAL

PRINCIPAL
VEL R.S. MEDICAL COLLEGE
(COLLEGE OF NURSING)
42, AVADI-ALAMATHI ROAD
VELLANUR (POST)

CERTIFICATE OF ENGLISH EDITING

TO WHOMSOEVER IT MAY CONCERN

This is to Certify that the dissertation Work **"A Study to assess the low visual acuity and its influencing factors among school age children in Poonamallee, Chennai 2010-2011"** done by **Mrs.J.Gnana Deepa**, II year M.Sc.,[Nursing] Student of Vel. R.S Medical College of Nursing, Chennai is edited for English Language appropriateness by _____.

SIGNATURE:
K.JANAKIRAMAN, M.A.,M.Ed.,
P.G.T. in ENGLISH
Govt. Hr. Sec. School,
RANIPET-632 401.

CERTIFICATE OF TAMIL EDITING

TO WHOMSOEVER IT MAY CONCERN

This is to Certify that the dissertation Work **"A Study to assess the low visual acuity and its influencing factors among school age children in Poonamallee, Chennai 2010-2011"** done by **Mrs.J.Gnana Deepa**, II year M.Sc.,[Nursing] Student of Vel. R.S Medical College of Nursing, Chennai is edited for Tamil Language appropriateness by _____.

SIGNATURE

M.RAJU, M.A.,M.Phil.,M.Ed.,
P.G. Asst. in Tamil
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RANIPET-632 401.

Children are God's Gift. Prevention is better than cure. So as a parent we should know about the child's health condition and early treatment.

What do you mean by Low Visual Acuity?

Visual acuity less than 6/6 was considered as Low Visual Acuity.

Factors which influencing Low Visual Acuity:

- Sitting too close to the television or computer.
- Holding a book too close to your eyes.
- Reading, sewing or doing other close work in dim light.
- Genetic disorder.
- Congenital anomalies.

Symptoms of eye strain:

- Headache
- Sore, burning or itching eyes
- Tired eyes
- Watery eyes
- Dry eyes
- Temporary blurred or double vision
- Light sensitivity
- Trouble focusing between paper and computer monitor

Tips on eye care for children:

- **Diet:** A healthy diet with emphasis green leafy vegetables, drumstick, carrot, beetroot, fresh fruits including mango & papaya are particularly rich in Vitamin A.
  - Give plant sources include green leafy vegetables & yellow / orange fruits & vegetables especially carrot, pumpkin, papaya, mango, oranges etc. Red palm oil is also rich in vitamin A.
  - Ghee / Oil / Butter should be added to these vegetables.
  - Give animal sources include – liver, egg, fish, milk, milk products such as cheese, curd and butter.

- **Avoid watching Television:** In a dark room, a well lit room with white light (tube light) is ideal.
  - Viewing distance for watching TV is 4 meters or more.
  - Do not put TV in your bedroom.
  - Encourage your kid to do other things besides watching TV.
  - TV time should be limited to 3 hours a day.

- **Computer:** Place the computer screen at eye level.
  - Distance between the monitor and the eye for children is 18 – 28 inches.

- Do not let the child sit for more than 40 min continuously in front of a computer monitor.
- Make sure your computer is clean and try using an antiglare screen.
- Make sure your work in a well ventilated room.
- Computer should be placed about 50 cm from the eyes.

- Near Work: Visual activities performed at close distance with in an arm's length.
  - After 30 – 40 min of continuous close work, take a vision break of 3 – 5 min by looking at distance objects or out of a window.
  - Hold their books about 30 cm away from their eyes and sit upright on a comfortable chair.

- **Others:** Give measles immunization
  - Promotion of breast feeding
  - Premarital genetic counseling family planning control in families with inherited diseases.
  - Water tight swimming goggles preventing irritation of eyes.
  - Visit to an eye doctor

Thank You!!!

Information on Eye Care & Prevention of Low Vision

குழந்தைகள் கடவுள் தந்த பரிசு. வருமுன் காப்பதே நலம், அதனால் பெற்றோர்களிடம் நாம் குழந்தையின் உடல் ஆரோக்கியத் தையும் பாதுகாக்க வேண்டும்.

கண்பார்வை குறைப்பாடு என்றால் என்ன?

கண்பார்வை குறைப்பாடு என்றால் குழந்தைகள் சரியாக எதையும் பார்க்க முடியாது.

காரணங்கள்:

சுற்று சூழல் காரணங்கள்

- தொலைக்காட்சி மிக அருகில் உட்கார்ந்து பார்ப்பது.
- புத்தகத்தை அருகில் வைத்து படிப்பது.
- படிப்பது, தைப்பது, மற்றும் வேறு அருகில் செய்யும் வேலையை மங்கிய விளக்கில் செய்வது.

மரபு சார்ந்த காரணங்கள்

உடன் பிறக்கும் போது வரும் காரணங்கள்

வைட்டமின் ஏ குறைப்பாட்டின் காரணங்கள்.

அறிகுறிகள்:

- கிட்டப்பார்வை, தூரப்பார்வை
- தலைவலி
- கண்ணெரிச்சல் மற்றும் கண் பார்வை மங்குதல்.
- கண் சோர்வு
- கண்ணில் தண்ணீர் வடிதல்.
- கண் வரண்டு போதல்.
- இரண்டைப் பார்வை.
- குறைந்த வெளிச்சத்தில் குறைந்த பார்வை.

பார்வை இழப்பை தடுக்கும் முறைகள்:

- வைட்டமின் ஏ உள்ள காய்கறி மற்றும் பழவகைகளை சேர்த்துக்கொள்ளுவது (அதிலும் கேரட், பூசணி, பப்பாளி, மாம்பழம், ஆரஞ்சு)
- சிவப்புப் பனை எண்ணெய், வெண்ணெய்யை காய்கறியுடன் சேர்க்கவும்.
- ஈரல், மூட்டை, மீன், பால் மற்றும் பால் வகை சார்ந்த பொருளாகிய தயிர் வெண்ணெய்யை சேர்த்துக்கொள்ளவும்.

வைட்டமின் ஏ ஊட்டச்சத்து கொடுக்க வேண்டும்

- 9-36 மாத குழந்தைக்கு 6 மாத இடை வெளியில், 3-5 வயது குழந்தைக்கும் 6 மாத இடை வெளியில் கொடுக்க வேண்டும்.
- மொத்தத்தில் மூன்று வயதுக்குள் 5 முறை வைட்டமின் ஏ தர வேண்டும்.
- வைட்டமின் ஏ ஊட்டச்சத்து ஒவ்வொரு சுகாதார மையத்திலும் கொடுக்கப் படுகிறது.

அருகில் செய்யும் வேலை:

- 30 - 40 நிமிடம் தொடர்ந்து வேலை செய்த பிறகு, கண்பார்வைக்கு ஓய்வு அளிக்க வேண்டும்.
- புத்தகத்திற்கும், கண்ணுக்கும் 30 செ.மீ இடைவெளி இருக்க வேண்டும்.
- நேராக உட்கார்ந்து படிக்க வேண்டும்.
- உங்கள் குழந்தை இருட்டு மற்றும் மிதமான வெளிச்சத்தில் தொலைக் காட்சியை பார்பது தவிர்க்கவும்.
- குழல் விளக்கில் பார்ப்பதே தகுந்தது.

- தொலைக்காட்சிக்கும், கண்ணுக்கும் உள்ள தொளைவு 4 மீட்டர் அல்லது அதற்கு மேல்.
- தொலைக்காட்சி பார்ப்பதற்கு பதிலாக உங்கள் குழந்தையை வேறு ஏதாவது வேலையில் ஈடுபடுத்தவும்.
- தினமும் தொலைக்காட்சி மூன்று மணி நேரத்திற்கு மேல் பார்க்கக் கூடாது.
- கணிப்பொறிக்கும் கண்பார்வைக்கும் 50 செ.மீ இடைவெளி இருக்க வேண்டும்.
- கணிப்பொறி முன்பாக உங்கள் குழந்தையை 40 நிமிடத்திற்கு மேல் அனுமதிக்க கூடாது.
- கணிபொறியில் காணும் எழுத்துக்கள், வண்ணங்கள் பார்ப்பதற்கு எளிதாக இருக்க வேண்டும்.

மற்றவை:

- மரபு சார்ந்த நோய் உள்ளவர்களுக்கு, திருமணத்திற்கு முன்பே, குடும்ப கட்டுப் பாட்டை பற்றி ஆலோசிக்க வேண்டும்.
- நீச்சல் குளத்தில் குளிக்கும் போது பாதுக்காப்பு கண்ணாடியை அணிய வேண்டும்.
- தவறாமல் கண்மருத்துவரை அலோசிக்க வேண்டும்.
- தட்டம்மை ஊசியை போட வேண்டும்.
- குழந்தைகளுக்கு இரண்டு வயது வரை தாய்ப்பால் கொடுக்க வேண்டும்.
- வேறு கண்ணாடியை அணிவதை தவிர்க்கவும்.
- கண் மருத்துவர் அனுமதி இல்லாமல், கண் சொட்டு மருந்தை போடக்கூடாது.
- கண்ணில் எண்ணெய் போடக்கூடாது.
- பள்ளியில் மற்றும் சமூகத்தில் கண் பார்வை சோதனை நடத்தினால் தவறாமல் உங்கள் குழந்தையை அழைத்து சென்று பரிசோதிக்கவும்.

கண் பார்வை குறைபாட்டை தடுக்கும் முறைகள் மற்றும் கண் பாதுகாப்பு பற்றிய கையேடு